The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING

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Production Decreases 88,194 Bbls Daily

Average daily production in United States week ending Nov. 24, 2,171,834 bbls.

Bottom Seems to Have Fallen Out at Powell Where Average Output Dropped 61,000 Bbls. With Slump Continuing

Loss in daily production in United States week ending Nov. 24, 88,194 bbls.

By Andrew M. Rowley

One of the largest decreases in crude oil production ever registered in the history of the industry was recorded during the past week when the output of all the fields of the United States showed a decline of 88,194 barrels daily as compared to the production for the previous week. The major part of this decline resulted from the rapid falling off of wells in the Powell Field in Texas, the decrease in that field alone amounting to 61,000 barrels a day, the average production for the week ending November 17, during which period the field attained its peak, being 325,000 barrels daily while during the past week it had dropped to an average of 264,000 barrels.

That the decline is not a spasmodic occurrence to be followed next week by a return to former records is indicated by late reports from the Powell Field which show the decrease there is continuing rapidly with prospects of another big drop in average output for this present week. On last Saturday, the production of Powell had dropped to 244,000 barrels a day and on Monday of this week it was less than 225,000 barrels. Oil men freely predict the field will fall to 200,000 barrels or below by the end of this week, which would mean another substantial decline in the average production for the week.

Decline of Powell Most Important

As has been emphasized in these columns many times before, the Powell Field has been the most important factor in the overproduction situation since the flush fields of California began to decline during the latter part of last July. The decrease in output at Powell is as sensational as the rapid rise of this field since its first big well was completed May 31 last. On November 13, all wells of the field were opened to their full capacity and the production of the field jumped to 354,893 barrels for that day, that being the peak. With all the wells opened wide, the flush output fell quickly as had been anticipated, the average for the week being 325,000 barrels, this, too, in the face of numerous completions during the period.

During the past week, 24 wells were completed in the field, 22 of them being oil producers with an initial output of 47,000 barrels. Despite this large flush output, the average production dropped 61,000 barrels a day. That shows conclusively what may be expected of the field. With Powell seemingly on the verge of reaching an average of 200,000 barrels a day and California having declined 125,000 barrels a day since it reached its peak last July, these two areas which were responsible for the overproduction situation which has menaced the prosperity of the entire petroleum industry during this year, will show a decrease of 250,000 barrels a day in production of crude petroleum.

Decreases in Other Oil Fields

The production of all the fields of California showed a decline of 8,900 barrels daily during the past week due to decreased output of Santa Fe Springs, Long Beach and Huntington Beach, the three major fields of the State and the ones responsible for the big production attained by the State during this year. Santa Fe Springs, the premier field of the State for months, continued its downward trend with a decrease in output amounting to 14,000 barrels a day. The drop at Long Beach was 5,000 barrels daily and at Huntington Beach 2,000 barrels. Torrance showed a material spurt, the output there being increased 60 per cent during the week, it jumping to 30,500 barrels from 19,000 barrels.

The heavy oil district at Smackover, Ark., showed a drop of more than 10,000 barrels, which was offset to some extent by an increase in the light oil district there. The Wyoming-Montana area registered a decline of 5,000 barrels daily, while smaller decreases were recorded in the Gulf Coast, North Texas and Oklahoma. The weekly fluctuations in these fields have little effect on the general situation, however, as they maintain an average production which has not changed greatly in recent weeks.

Crude oil purchasing companies are buying more production, which is a most healthy and favorable sign. There is said to be a veritable scramble for oil in a number of the fields while the proration order placed in effect in Mid-Continent fields last July is now regarded as almost a thing of the past. Where it is still operative, purchases have been increased materially. Oil men are showing a tendency to increase their operations and renewed activity is manifest in many districts near production. Officials of many companies deprecate this seeming intention to start another drilling campaign declaring that any action along that line just at this time might be premature and result in harm rather than good.

One feature of the general situation which should be considered is the fact there are a number of fields where it is believed production could be increased materially without much trouble or delay. This is particularly true in parts of Oklahoma where, due to the curtailment of operations made effective when the overproduction situation became such a problem, production was forced down from more than 500,000 barrels a day to 382,766 barrels daily during the past week. The shut-down agreement in the Burbank Field has been adhered to by operators and production there has shown a steady decline. Last July this field was producing 120,000 barrels daily. It is claimed the output of the field could be brought back to this figure were operators to drill leases and enter into an active development campaign.

Crude Oil Price Changes

While refiners in some sections of the United States are offering and paying premiums above the posted prices for crude, the industry as a whole does not expect any general change in present quotations until some time after the first of the year, probably towards spring. All are fairly confident there will not be any further reductions in crude oil prices and all are as thoroughly convinced there will be substantial advances early next year. Just how soon these advances materialize depends on the rate of decline of production and how well consumption holds up during the winter. Consumption is maintaining a better average than ever before in the history of the industry. This fact with the rapid decline of Powell and the steady falling off in California is the best indication of what the future holds, but, as before stated, operators must be careful not to become too active in development work until the decline in production must be offset by new output.

Aside from the Torrance Feld in California, there is no area at this time which looms as any great menace in the production situation. It will require considerable time to bring Torrance up to a production which will make it much of a factor in general consideration. The increase in production, when it develops, doubtless will come from all present producing territories. The Gulf Coast area is capable of producing more oil than its records at present show as operations there have been curtailed to a minimum for a long time. As noted above, Oklahoma can increase its output in a comparatively short time. Operators in the eastern fields are waiting only for an increase in price of crude which will make drilling profitable to start new developments.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended November 24, and a comparison with the previous week follows:

Field	Nov. 24	Nov. 17
Oklahoma—Northern Fields:		
Tonkawa	47,480	47,274
Burbank	86,136	88,479
Other Osage Fields	28,115	26,100
Cushing and Shamrock	24,395	24,340
Bristow and Eastern Bristow	47,325	49,175
Northern Miscellaneous	85,915	84,920
Southern Fields:		
Healdton	17,305	17,310
Hewitt	21,175	22,220
Southern Miscellaneous	24,920	24,715
Total Oklahoma	382,766	384,533
North Louisiana	57,730	56,965
Arkansas—		
El Dorado	11,645	11,530
Smackover Light	19,890	17,760
Smackover Heavy	79,900	90,145
Other Arkansas Fields	10,580	10,650
Total Arkansas	122,015	130,085
North Central Texas	112,255	116,030
East Central Texas (Mexia, Currie, Corsicana, Powell)	308,715	369,750
Kansas	71,080	70,820
Total Mid-Continent Area	1,054,561	1,128,183
Gulf Coast	94,898	95,930
Eastern	109,400	109,115
Wyoming-Montana	155,475	160,400
California—		
Santa Fe Springs	216,000	230,000
Long Beach	240,000	245,000
Huntington Beach	72,000	75,000
Torrance	30,500	19,000
Remainder State	199,000	197,400
Total California	757,500	766,400
Total United States	2,171,834	2,260,028

Decrease, 88,194 Barrels

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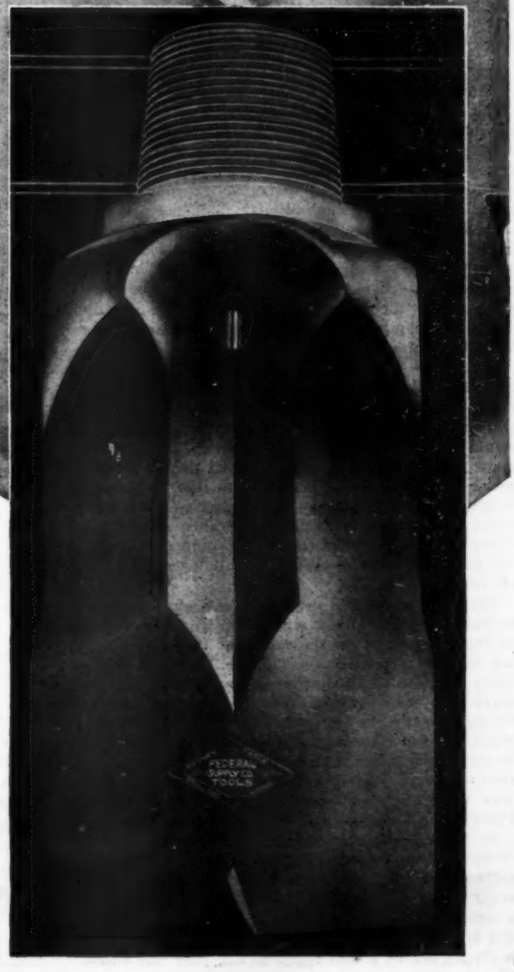

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"R'ARIN' TO GO"

The conviction that the turn has been passed by the petroleum industry became general last week. It was first reflected in the ranks of producers who immediately began planning for resumption of operations. Those engaged in transportation and refining, while sharing the optimism, sounded a warning naturally enough, from their viewpoint, against crowding production until the surplus stocks begin to dwindle materially. But this difference of opinion was founded on habitual attitudes rather than a survey of the situation at large and especially the world requirements for oil and the provisions for maintaining it.

It must be remembered, in justice to the producers, that they cannot be expected to wait until stocks are actually being drawn upon. If they did and the delay resulted in a shortage of supply they would be as much criticized then as now. They know that oil is not to be found and turned on like water from a main. They have to find it, often a tedious and laborious and costly process, and their instinct to get ready as far in advance as possible is not only logical from their own standpoint but to the advantage of the rest of the industry and the oil consuming public.

Various guesses and estimates are being made as to the time when stocks will be drawn upon. Most of these are based on the fact that the winter season is that of lowest consumption. But the possibility of more rapid decline in production must be taken into consideration. The two factors must be figured together in any estimate that will be worth while. Lower consumption's effect upon stocks may be materially offset if there is a notable drop in the rate of overproduction and there are signs that this may be just what may happen. The slump in Powell, for instance, may be much more rapid.

It is well enough to caution producers against "drilling their heads off," but it should not be forgotten that, with the decline of the fields that have contributed the overproduction, there is less risk of a drilling campaign rushing production to dangerous heights. On the other hand preparation to find a supply before stocks begin to fall may the wisest plan for all.

GETTING OUT OF HAND

Has the oil industry grown so big that it is "getting out of hand?"

There are daily multiplying indications that it may be.

In the pioneering days it was a comparatively simple matter for one group to dominate the infant industry. Yet even that domination was not secured without the bitterest fight in industrial history, a battle so bitter that its animosities are not extinct a generation after and survive among a public that was not born when it raged.

It culminated in the dissolution decree of 1911, segregating the Standard Oil Trust into 34 separate companies. A skeptical public refused to believe that this disintegration was genuine but neither the public nor the Supreme Court, or the oil industry itself, foresaw or even imagined the phenomenal expansion of the world's demand for petroleum products that was to upset all calculations.

In 1907 the capital invested in the petroleum industry in the United States amounted to $750,000,000, a colossal sum—for those days before the World War had taught us to talk of billions. Today the capital invested in the oil business is over $11,000,000,000 and it has become the second largest in the country, with the automotive industry, created by it and dependent on it, third.

This tremendous increase in investment in oil indicates the vast diffusion of financial participation in the development of the industry to its present mammoth proportions. Take the Standard of Indiana which finds it has now 43,000 stockholders instead of 4,600, and expects to have 100,000. The Standard of New Jersey has now 60,000 stockholders, having added 14,000 within the past year.

The natural effect of this immense infusion of new blood has been well-nigh overwhelming. It has compelled individual effort on the part of the management of every company, regardless of its past affiliations, to satisfy this expanded ownership. This competition has become so keen as to attract the attention of that famous critic of the oil industry, Ida Tarbell herself, who in a recent article in The New York Republic, confessed she had observed revolutionary competitive developments within the "Standard Oil Group" that she never expected to see. Particularly she cited the action of the Eastern marketing companies cutting the price of crude to the dismay of the Western producing companies and the action of the Western companies reducing gasoline to the consternation of their erstwhile Eastern associates.

The fact seems to be that the oil industry has become too big for any group or interest to dominate it. It is impossible to imagine that any industry acknowledging leadership should have been so evidently impotent to cope with its problems as the oil industry has appeared to be this year. But it was a very natural outcome of concentration on competition so intense that the welfare of the industry as a whole was lost sight of. And particularly so when the competition extended even to the former component parts of the once dominating interest.

The chaotic conditions that have resulted have convinced thoughtful men in the business, regardless of their former factional alignments, that the crying need of the industry today is for some authoritative leadership,—not domination, since the business has become too great for any one element to control its destiny, but constructive counsel and direction of common purposes and policies for the good of the entire industry.

The American Petroleum Institute was established with some such hope but it is becoming plain that more is required than annual conventions and discussions. Events within the industry do not happen according to any schedule. They may spring forth over night. The need is for prompt consideration of problems as they arise by some continuing conference of the best minds in the industry which can offer real leadership, a conference so impartially established that it will be regarded within and without the industry as authoritative and, especially, as representative of all the elements within the industry.

The questions to be discussed at the St. Louis meeting of the institute are of vital importance. But there is no assurance that they can be disposed of within a three days' session or that others may not arise at any time within the interval before the next annual meeting. Every oil man will tell you that the future cannot be foreseen in the oil industry, of all industries. Time and again during the present year many have frankly confessed they were groping in the dark, impotent "in the fell clutch of circumstance."

But there is certainly no reason why they should be and there is every reason why they **should not** be. Men with the knowledge, skill and experience to develop a business from $750,000,000 to over $11,000,000,000 within a few years surely should be able to devise means to protect that industry from being thrown into demoralization by happenings within it or by attacks from without.

Fear of what the politicians may do to it, for instance, by misleading the public and inflaming popular prejudice by appeals to traditions that have not the slightest relation to present day conditions, should be met boldly and courageously. Instead of submitting to political interference there should be a demand for the same Governmental recognition and assistance to the oil industry that is so lavishly bestowed on the farmers, the lumber industry and many others so carefully nurtured byGovernmental bureaus and departments. The elaborate and painstaking care with which the Government supplies these other industries with information and cooperation is in marked contrast with the so dilatory as to be almost useless reports furnished the country's second largest industry. Surely an industry upon which the industrial and commercial machinery of the country is dependent for lubrication and motive power is entitled to every consideration that Governmental agencies can afford. Instead, the bureaus that could be of value to oil men are found to be so undermanned and so niggardly equipped that their services are so belated as to be almost worthless.

Not what the Government may do to the oil industry but what it should do FOR the industry should be the chief consideration, and if the 13,000,000 customers at the filling stations knew the facts that would be what they would unanimously demand.

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Group 3 Markets Show Improvement

Return of Premium Paying for Oklahoma Crude Tends to Stop Recent Downward Tendency of Refined Markets. New Navy Advances

By C. O. Willson

Apparently reflecting an optimism which has been general in Mid-Continent production circles, a stronger tone in refined market of Group 3 developed during the past week and prices with the exception of natural gasolines which are weaker, were either firm or advancing. Although some were inclined to discount the improved market tone as largely a temporary development there was a feeling widespread enough to be termed general that, due to fundamental changes affecting the entire industry, for the first time this year there was cause for belief that the spot market price trend on practically all products would be up rather than down for the immediate future at least.

The real reason underlying this improved situation is the "tightening" of the crude situation. So far as the supply and demand situation for refined products of Group 3 is concerned there have been no important changes during the past week in conditions which have prevailed during the past month and had it not been for the upturn in the crude situation prices would probably have been lower. But it has been predicted by many market observers that prices, especially on gasolines, would begin to start upward just as soon as the major purchasing companies stopped prorating their crude runs and the day of "bootleg" crude to the independent refiner was brought to the end.

Effect of Crude Change

Almost over night the refining and marketing industry was made to realize that the crude situation had changed in Oklahoma, Kansas and North Texas and the immediate result was a cessation of price concessions which have been the rule for months. As further proof that crude markets were undergoing an important change the refiners became aware that some of their number had already found it necessary to pay premiums of from 15 to 25 cents in order to secure a crude supply in competition with the major buyers.

The most important result of this situation was the strengthening of the New Navy market. New Navy was purchased last week for resale as low as 6⅛ cents and many buyers were confidently awaiting 6-cent quotations. These buyers now have raised their offers to 6¼ cents and are no more successful than they were with the 6-cent offer. At this writing very little material was available under 6⅛ cents either in Group 3 or any part of the Mid-Continent area.

Elsewhere in this issue are explained the changes in the crude situation which have caused practically all the major buyers in Oklahoma and adjoining States to reverse their proration plan of purchase adopted in mid-summer. The Prairie Oil & Gas Co. and the Sinclair Crude Oil Purchasing Co. are now the only major buyers which have not returned to 100 per cent runs. These two companies have greatly increased their runs however and in some fields they are running as much oil as they were before proration became effective. The Prairie Oil & Gas Co. is said to be running twice as much crude as it was two months ago. This has been due to the fact the company's delieveries to eastern and middle west refiners have increased and the company is also said to be running considerable oil to storage. These increased purchases on the part of the Prairie and Sinclair were needed to remove the surplus crude which has been available to independent refiners in several cases under the posted price of the large buyers. There has been considerable evidence of this tighter crude situation during the past week. Producers bringing in new wells not only within the proven areas but also in extension territory have had no difficulty in securing pipe line connections.

Oppose Premiums

Although it is obvious that the refining industry welcomes the improvement in the refined market it is equally as certain that the refiners do not desire a return to premium payment for crude. Study of present crude and refined markets and a comparison with those of other years will show that the refiners are not securing enough for their refinery output to justify them in paying premiums for their crude supplies. Some refiners took advantage of the proration period to make long time contracts with producers assuring them of a part or the whole of their crude at posted prices. Only the stronger concerns were able to do this. Some plants during the proration period, due to the low refined market structure, were unable to retain their contracts with producers and the latter are now showing a tendency to favor the larger buyers.

Many in close touch with conditions see in this situation a development of great importance to refined markets through the winter months. It is believed that it will bring further curtailment in refinery runs and thus reduce the supply of refined products available, a development needed to prevent lower prices during the period of minimum gasoline consumption. These market observers believe many plants, both large and small, will not be in a position to pay the premiums asked and will either shut down or curtail their runs. Following out this line of reasoning still further it is said that the Standard and other large companies faced with a possible crude shortage before the close of another year will restrict their refinery output as much as possible and add to their already heavy stocks. It is estimated that at the present time crude production exceeds consumption approximately 300,000 bbls. daily but if the production continues to decline as it has during the past month this difference will be wiped out before the industry enters the season of maximum consumption in the spring.

Curtailing Refinery Output

As has been pointed out in these columns previously the unsurmountable difficulty in curtailing refinery output in the past has lain in the action of the larger companies. The smaller independent concerns which constitute the bulk of the Mid-Continent area, considered as a whole, have reduced their runs but at the same time the larger plants were more than offsetting these decreases with increases. These companies with facilities to transport the constantly increasing cheap crude supply from California and with strong competition among themselves pursued the logical course of increasing their refinery output. But with crude production declining and no important new supply apparent at this time it is reasonable to assume that these companies would endeavor to conserve as much as possible.

If these developments materialize as outlined gasoline prices will probably gradually advance. It would tend to strengthen the entire market structure although gasolines would probably benefit more than any other product. Some of the smaller plants will begin to store gasoline after the first of the year. An advancing market would tend to encourage these storage plans and this would also aid the market.

Premium paying for crude is largely confined at the present time to the highest gravities. The Champlin Refining Co. is reported to be paying a 15-cent premium for part of its crude supply. Premiums as high as 25 cents are reported for Garber crude. It is pointed out that these premiums are not so much out of line with values as established by the major buyers when the quality of the crude is considered.

Gasolines and Naphtha

There was nothing unusual about the movement of straight run gasoline during the past week. So far as known there were no export orders placed with Group 3 refiners although a few plants are still making deliveries on orders placed earlier in the month. There were no large purchases of New Navy for domestic shipment, although several buyers are in the market who are becoming more anxious daily to place large orders for shipment over December. Some of this business was placed a week ago at prices in line with spot market. A few plants took enough of this business so that with their regular shipments they have sold all they expect to have available over the month. Others aware of the improved gasoline situation are asking more than a majority of the buyers are willing to pay for the December business. These same plants have boosted their spot quotations from ¼ to ½ cent. Some sales as high as 7 cents to the trade are reported and additional refiners state that they expect to establish that price to the trade beginning the first of the month.

The high gravity gasolines have not yet advanced in price. There are buyers in the market some of whom state they can obtain better prices outside of Group 3. There are some stocks of all the higher gravities in Group 3 which the refiners are willing to dispose of at this time but due to the general improvement they are not giving any further concessions in prices. Higher prices are believed probable within the next few days.

Kerosene and Distillates

Kerosene continues strong although the 5-cent product predicted by some has not yet materialized. There is apparently no water white kerosene available in Group 3 under 4½ cents and the same situation obtains in other refining centers of the Mid-Continent area. Prices in fact are generally higher in other areas. There have been no large purchases during the past week. The further export buying mentioned in these columns last week has not materialized. It is understood that these buyers are not willing to pay the prices asked and, temporarily at least, so far as Group 3 is concerned, have withdrawn from the market. There were buyers in the market endeavoring to secure spot shipments under 4½ cents for 41-43 gravity with offers of 4⅝ cents over December. Refiners have little material on hand and some are themselves sold short on spot business and over December.

However, there will, of course, be considerable material available in the Mid-Continent area after the first of the month and the market trend until the first of the year should be soon apparent. Some export buying will be necessary to maintain the present price structure. In view of the generally improved situation and the known low stocks of kerosene, the situation looks favorable to the maintenance at least of present prices.

Several plants reported an improvement in the movement of distillates. Colder weather has prevailed in the areas in which this Group 3 disposes of the bulk of its distillate output and it is presumed that this fact accounts for the improved demand. Any large increase in the demand for this product

REFINED MARKET BAROMETER

Premium paying for crude on the part of independent refiners in the Mid-Continent, California and Pennsylvania and a general tightening of the crude situation throughout the United States was the principal development of the past week affecting refined markets. There was a firmer tone in gasolines and prices were advanced in several refining areas. The demand for kerosene continued generally strong although export purchases were not so apparent as the previous week. The demand for gas and fuel oils was fair to strong with no important changes of a general nature. Distillate market unsettled with no uniformity in price changes. Natural gasolines weak and price lower. Neutral situation unchanged.

Mid-Continent—Due largely to improvement in the crude oil situation prices on refined markets with the exception of natural gasolines were generally firm or advancing. New Navy gasolines advanced in all refining areas with the exception of Arkansas, where there was no change. High gravity gasolines were firm in price with little change in the demand. Fuel and gas oils were stronger than the previous week with no price changes. Kerosenes continued strong with only minor price changes. Natural gasolines generally weak with prices ¼ to ¾ cents lower. Neutrals unchanged.

Atlantic Seaboard—Gasoline consumption holding much better than expected but price wars may result in lower tank wagon prices. No important gasoline price changes. An increasing number of buyers are able to buy California refined products with large offering of Mid-Continent and Pennsylvania gasoline. Export gasoline movement good despite the lower prices. Bunker fuel oil reduced 10 cents due to increased receipts of Mexican oil. Large increase in receipts of crude and refined oils.

Pennsylvania—Gasoline weak with lower prices where there were any changes. Kerosene demand is fair with prices generally firm. Good demand for cylinder stocks with 600 steam refined especially strong. Fuel oil weak and prices are lower. Grade situation becoming tighter and small premiums are reported.

Chicago—Good movement of gasoline with a gradual advance in New Navy to a price range of 6½ to 7 cents. Fair movement of kerosene with prices firm. Fuel oil and distillates firm. Strong demand for gas oil. Natural gasolines weak and prices lower. Poor demand for blends. Generally stronger tone for the entire market.

Gulf Coast—Demand for all products practically unchanged and price structure in the same. Most important market development of the week was the report that premiums had been offered for Gulf Coast crude. Crude advances and higher prices for refined products are expected after the first of the year.

will result in higher prices, largely because of the strong kerosene market. Prices have not changed during the past week.

Fuel and Gas Oils

Gas oil is hard to obtain in this Group. Some sales at 2¼ cents for 32-36 gravity are still reported but the bulk of the output is moving for 2⅜ and 2½ cents. There is a good demand from gas plants in the middle west. The larger marketing organizations are handling the sale of this product and there is active competition for the output of small plants.

This situation in regard to gas oil is aiding in maintaining the spot market on fuel oils, because refiners are getting a maximum gas oil recovery at their plants. Fuel oil is unchanged as to price and there is a firmer tone in the spot market. The North Texas situation has improved and recently Group 3 prices have been determined by conditions in North Texas rather than competition within the Group. As has been the case since Mid-Continent crude was reduced, there have been few purchases during the past week under 70 cents, but they are the exception. With the marginal contract basis at 60 cents the railroads and other contract buyers are ordering out maximum amounts.

Natural Gasolines and Blends

Natural gasolines were again reduced in price. It is said prices are near bottom and a glance at present quotations will convince anyone of the truth of this declaration. This declining market has been blamed on the small manufacturers who have inadequate storage and marketing facilities. However, it is known that many of the larger plants are closely following, if not leading, in giving price concessions. There seems to be a general opinion that the situation is not going to improve for some time and the larger manufacturers are not yet willing to store large quantities.

An improvement in the straight run gasoline markets may aid this product. Past history indicates that natural gasolines play rather a lone hand in the markets. The low prices will, in fact, tend to retard improvement in the straight run products. Blend prices are low and due to this fact, the movement improved during the past week. With natural gasolines at their present levels it will be possible to maintain low prices. Due to the present tank wagon levels in the Middle West, jobbers will seek cheaper material if New Navy advances and this means a better demand for the cheaper blends. It is on this development that some natural manufacturers base their hope that present price levels will not be materially lowered.

Neutrals

The few neutral manufacturers of Group 3 have recently become aware of important competition in the sale of some of their products. Certain Standard companies have offered material below the Group 3 prices and in some instances the meeting of the price has been necessary. The quality of the product manufactured in Group 3 is an aid in this situation and on some grades no price concessions have been necessary. Due to a large export business the Barnsdall Refining Co. has largely withdrawn from the spot market. There is a generally strong demand for bright stocks.

WILL MAKE THE SHEEHAN LINE

Walter J. Sheehan of Santa Paula Cal., has been making a tour of Eastern and Mid-Continent oil fields and was a recent visitor in Tulsa. Mr. Sheehan has made arrangements with the Oklahoma Iron Works and with the Titusville Iron Works for the manufacture and sale of the Sheehan wire line knife and Sheehan combination jar-down and trip spear. He is the owner of the Santa Paula Machine Shops, which has been supplying California oil men with their needs for years, but the demand made it necessary to make Eastern and Mid-Continent connections for the manufacture and distribution of the Sheehan line of supplies.

REFINERY STATISTICS AVAILABLE SOONER IF REFINERS COOPERATE

By Charles E. Kern

WASHINGTON, D. C., Nov. 26.—Unusual efforts are now being made by the United States Bureau of Mines to bring its work in the compilation of oil refinery statistics to a degree of excellence as near perfection as possible. W. C. Hill, petroleum economist, in charge of these compilations, has just returned from a tour lasting three months and taken with the object of discovering means for advancing this effort of the Government to furnish the industry with the most illuminating and up-to-date information of interest to the refiner, producer and distributor.

Mr. Hill has brought with him the result of all the criticisms he could obtain in respect to the classification of products of petroleum, which will be utilized for the first time in his monthly report for Janury.

An outstanding effect in respect to these statistics, of which Mr. Hill is now concerned, is the possibility of making all of these figures available to the industry 15 or 18 days earlier each month than they are now issued. This would double or treble the value of the work of compiling refining statistics. It would effectually remove the criticism that has frequently been made in respect to all classes of government reports which is that they contain information too old to be of practical use. These statistics could be placed in the mail here on the 18th of each month following the 30 days which they cover instead of from the 2nd to the 5th of the second month following the period covered.

Cooperation Desired

The one thing needed to accomplish this much desired result is the active cooperation of refiners by seeing that the Bureau of Mines is placed in possession of the information furnished by refiners 15 days after the period covered ends. Extensive inquiry has been convincing of the entire practicability of this plan. It is now to be seen whether refiners will push their reports forward more promptly.

If the mailing of refinery statistics to the Bureau of Mines could be placed on the same plane of prompt action that is insisted upon by every board of directors in respect to some of their work of its statistical force the desired result would be accomplished. Appeals have been and are now being made to refining companies to do this. During his swing about the oil fields of the West, including the Mid-Continent, the Gulf and California fields, Mr. Hill personally visited from 100 to 150 refineries.

One of the obstacles to having refining statistics forwarded to Washington more promptly has been discovered in the fact that some officials of companies making these returns are extremely cautious in waiting for days for audits of their figures to include trifling corrections so that they may be absolutely correct, although they know approximately what the result is a week previously. In stating millions of gallons of gasoline, for instance, the result sought is just as satisfactory if the figure is within 100 gallons one way or the other.

Tendency to Delay

Another difficulty is met in the tendency to put off work not required by law or by a mandatory order from commanding officials. The refinery statistics often lay on the desk of the company's statistician until a variety of other matters are cleared up. The refinery statistics being compiled by the Bureau of Mines solely as an aid to the Government they have always been sought by voluntary cooperation and no effort has been made to require them by law, which might be done should the industry as a whole desire it. If a penalty should be levied for failure to send this information to Washington promptly it would then be as easy to get the returns as it is now to obtain returns in tax matters, neglect of which subjects the taxpayer to great inconvenience and to money loss.

Every effort is now being put forth to learn of new refineries, both in respect to their construction in the first instance and the resumption of operation after they have been shut down after a considerable period of time. The Bureau of Mines has no way to accomplish this result except by gathering the information from periodicals which is necessarily very difficult and requires time and vigilance in reading. Experienced refiners follow the wishes of the bureau in continuing to forward monthly reports even when for many months they only show that the plant has been closed.

It is desired that all refiners should advise the Bureau of Mines of the construction of new refineries so that in the interest of the industry they may be communicated with at once to obtain their earliest operations. Every association of oil men should cooperate in that way because they are the very ones who are interested in having the new production included in the monthly reports. The new refinery is often operated by men who are not especially informed in respect to matters of this kind. However, it is not believed here that more than a dozen concerns are operating at this time without reporting to the bureau and they are not large refineries.

Stocks on Hand Important

When some plants shut down they fail to report stocks on hand although they rgeularly attend to that feature of their reports whenever the refinery is in operation. This failure is one of the troublesome causes of inaccuracy. In the case of the gasoline blanks this was evident in the September reports. There were over 400 companies that had produced gasoline and in September only 250 of them reported as operating. That left over 150 reported as shut down and of that number at least 100 did not report stocks of gasoline on hand, although many of them did have gasoline on hand. It would have been very unusual if they failed to have some stocks on hand. The inaccuracy that might be caused in this way is readily seen for if each of the 100 failing to report had an average of only 10,000 gallons the total gasoline stocks on hand and omitted from the September figures would have been very considerable.

With the exception of the California refineries, Mr. Hill found that it was possible for refiners to place their reports in the mails 10 to 12 days after the close of the month so that they could reach the bureau by the middle of each month. The California reports are sent direct to the bureau's office in San Francisco and the figures are compiled there and the totals are telegraphed to Washington. They could be received in Washington by the 15th or 17 of each month. If this plan were followed the statistics of the Bureau of Mines on oil refining could be completed and mailed on the 18th of each month as it requires only three days to make up the report after all data have been received. It takes the bureau only three days to compile reports that now require from 30 to 35 days for the delivery of the figures here.

One of the means recommended to check errors is the balancing of refinery runs and this is now done by at least 100 of those reporting. Failure to balance refinery runs will now and then be shown by a report that a vastly larger amount of products were recovered than were run to the stills. That error is generally the result of failure to account for excess oil that is rerun to the stills.

Definitions Adopted

Efforts are being made by the bureau to properly define every class of refined product and all suggestions have been utilized in the form of the tabulated report that will be used for the first time next January.

The following definitions have been adopted for the present and until further criticism and recommendations for their modification is received from the industry:

Unfinished oils rerun (net) and unfinished oils produced (net): To include all products in process of manufacture rerun by you or by other refineries, that is, tops, untreated kerosene distillates, or other products to be further distilled or treated. Stocks of unfinished oils to be rerun should be shown in barrels of 42 gallons on the line opposite the heading "Unfinished Oils Rerun" under "Domestic Oils" and should include stocks of natural gas gasoline which are not included with finished gasoline in storage. Note—In computing unfinished oils rerun (net) subtract gross Unfinished Oils Produced from gross Unfinished Oils Rerun. Computation of unfinished oils produced (net) is the reverse of the above.

Gasoline: To include only products that can be marketed as motor fuels or gasoline without further treatment, excepting Diesel engine fuels.

Kerosene: To include all illuminating oils.

Gas and Fuel Oils: To include all finished distillates below kerosene, except lubricating oils. Also include residuum sold for gas making or for fuel.

Lubricants: To include all classes from spindle to grease and cylinder stock.

Wax: To include all crystalline paraffin, but not vaseline, petrolatum, etc.

Other Finished Products: To include all finished products such as road oils, petrolatum, medicinal oils, and any other products not listed above but finished for the market.

As soon as Mr. Hill is able to again be absent from his office here he will visit as many eastern coast refineries as possible so that he may receive at first hand the views of these refiners respecting refinery statistics as he has done in the case of western refiners. In the meantime, careful attention will be paid to any views that may be presented to him by means of correspondence.

LESS LIGHT OIL MAY RAISE MEXICAN TAX

While production of 72,437,342 bbls. of heavy oil in Mexico in the first nine months of 1923 is 55 per cent greater than the total of 46,558,601 bbls of heavy oil produced in 1922, it bears a tax rate of little more than half that of light crude oil, of which 48,730,392 bbls. were produced in the first nine months of 1923, against 138,498,648 bbls. in all of 1922. Estimated production of light oil in the entire year of 1923 of 65,000,000 bbls. is less than half the quantity produced in 1922. This indicates that the income from oil taxation, owing to smaller production of light oil, has not kept pace with the requirements of the program for payments on foreign debt, as arranged under the Lamont-de la Huerta agreement.

If retrenchment measures already in effect do not bring expenditures within the limits of the present income, taxes must be increased to enable fulfilment of the debt reduction plan, according to a Mexican official.

MORE DEMAND FOR TANKERS

Increasing demand is reported for tankers in Transatlantic trade. One of the most noteworthy charters closed recently was that of British tanker Scottish Castle to carry about 9,000 tons of gasoline from California to the United Kingdom. That cargo amounts to 3,000,000 gallons approximately, and the charter rate is equivalent to about 2 cents a gallon. Tankers have frequently been alleged to move gasoline from Atlantic and Gulf ports to Europe, but comparatively few tank steamers have been chartered lately for gasoline shipments from California to Europe.

Is Dissolution of Standard Now Reality?

Keen Rivalry Between Former Associates and Active Competition for Business Talk of the Oil World

There are many within the oil business who are beginning to ask themselves if they have been as wise regarding what has been going on within the industry as they thought themselves to be.

They have been turning back their files of The Oil and Gas Journal to look up the Drake Day speech of Chairman A. C. Bedford of the Standard of New Jersey and others of Colonel Robert W. Stewart, chairman of the Standard of Indiana, to see if the significance of those utterances was not overlooked at the time.

New Jersey Isolated

This is what Chairman Bedford said at Titusville:

"I would like to say here that there is no business policy of the Standard Oil Co. of New Jersey which has anything in common, either in connection or execution, with the policies of any other unit of the petroleum industry, irrespective of any similarity of name or classification. In the present crisis of the industry (August 29, 1923) there are varying viewpoints and varying policies and whether the viewpoint and the policy of the company which I represent is right, or whether it is wrong, I can claim at least for it that it is an individual policy conceived and created in its own board room by its own board of directors for its own guidance and that it does not govern the actions of any other unit of the industry."

Indiana Independent

Colonel Stewart, at Springfield, Ill., reiterated with greater emphasis what he said in his previous tour of the Standard of Indiana territory:

"Immediately after the dissolution (of the Standard Oil Co. in 1911) the ownership of the various companies remained exactly as it was before. That is not true today. During the 12 years that have elapsed, the dissolution has become actual and the ownership scattered. In the last five years the number of stockholders in the Standard Oil Co. of Indiana has increased from 4,600 to 43,000. Five years ago our largest stockholder owned nearly 30 per cent of the total stock. Today the largest stockholder owns only 5¼ per cent and that shareholder is not an individual but a charitable institution, the Rockefeller Foundation. A few years ago only a wealthy man could afford to buy stock in the Standard of Indiana as it sold on the market all the way from $600 to $900 a share. Today almost anyone can afford to buy it—because by reduction of par value and stock dividends it is now (November 6, 1923) around $63.

"Our board of directors are the men who are responsible for the ideals and policies of the Standard Oil Co. of Indiana. These are the men, every one of whom has come up from the ranks, who run the Standard Oil Co. of Indiana and no one else. They do not take orders from anyone. They formulate the policies of the company. There is no Wall Street influence, no La Salle Street influence or any other kind of influence whatever regarding the management of this company. I want to emphasize this fact that I am speaking of the Standard Oil Co. of Indiana and not of the Standard Oil Co. of New Jersey, or New York, or Ohio, or California, or any other of the so-called Standard Oil companies. The Standard Oil Co. of Indiana has absolutely no connection whatsoever, either directly or indirectly, it has no agreements, either expressed or implied, with these other Standard Oil companies, except as a competitor in the acquiring of crude oil and in the marketing of manufactured products."

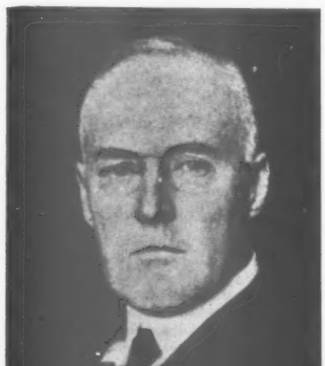
When these statements were published there were many who thought themselves worldly wise who assumed that the speeches were for effect, but even these, after watching developments in the industry, particularly among the Standard group, are rereading those statements in the light of actual happenings and wondering if their original hasty conclusion was not very wide of the mark.

Ida Tarbell, Too?

So keen a critic of the oil industry as Miss Ida Tarbell has been so amazed at these developments and their evident meaning that in a recent number of The New Republic she wrote as follows:

"Something has happened in recent days. That central, essential source of power, the uniformity of price, has been invaded. The Standard Oil Co. appears to be dividing in a way which to those who have watched the course of this extraordinary concern from its rise, is almost unbelievable.

"The cleavage has come between the two most important geographical groups—the Eastern group, composed of the Standard Oil Companies of New Jersey and New York, with certain Southwestern subsidiaries; and the Midwestern group, the most powerful units of which are the Standard Oil Co. of Indiana and the Prairie Oil & Gas Co. And it has come because, temporarily, these groups found their individual interests conflicting in the matter of price.



A. C. BEDFORD
Chairman of Board, Standard Oil Co. of New Jersey

COL. ROBERT W. STEWART
Chairman of Board, Standard Oil Co. of Indiana

"The sons are growing as strong as, or stronger than their father; the law allows them to act on their own and they are doing it. They have done it in this matter of crude oil prices and they are doing it equally in gasoline prices.

"It certainly looks very much as if the Standard Oil Co. might be crumbling—crumbling within; as if something had happened to it which the great dissolution suit had not been able to bring about. The parent company making a price for oil and its strong young relative of the West refusing to follow is something that has not happened in 40 years. A public voicing of a fundamental difference in policy certainly justifies the question: Is the Standard Oil Co. crumbling within?"

Real Segregation

Horace G. James writes that "a complete new alignment is taking place." "Probably nothing," he adds, "is contributing so much to this change in oil affairs as the so-called breaking up of the Standard group into real 'segregated' parts. I do not know that they are breaking up, but that is the persistent talk. I cannot say that all the Standard companies are gnashing teeth at each other, but people insist they are snarling back and forth."

Things are happening and events are shaping that are forcing the most sophisticated to doubt the survival of the traditions of the oil business. Readjustments and policies are being noted among the segregated companies inconsistent with the keenest competition. One company practically abandons another to buy in a distant but cheaper market. Producing companies suddenly enter into competition with refining and marketing former associates. And meanwhile the industry as a whole has been drifting towards the rocks, uncharted and unguided by any directing hand. People are asking if this would be possible with united action among the old Standard group.

New Men, New Methods

Oldtimers recall the great figures in the heyday of the Standard Oil Trust, world famous men who had worked together for a generation or more, knit in the firmest bonds of common experience and success. The disappearance of these pioneers may well have had much to do with the transition begun with the dissolution of 1911. The new dispensation which set men of individual initiative and strength of character at the head of separate organizations must naturally have inspired a certain amount of rivalry, human nature being what it is. The great increase in the number of stockholders, the necessity for securing vast new investment to keep pace with the extraordinary growth in the demand for petroleum products, was another factor compelling rivalry. Such a line of reasoning would explain much that is going on that is not easily capable of explanation otherwise. And then to cap it all came the flood of overproduction threatening all and forcing each to look out for itself.

Students of the industry familiar with the inside history of the present year cite the ruinously extravagant extension of filling stations as further corroboration of the demoralization due to the dethronement of leadership. They ask if any responsible leadership of the industry would have permitted a condition that invited the invasion of outsiders into the gasoline business, an invasion that led ultimately to the exploitation of "distress" gasoline at reckless reductions and upset the whole price structure. The only answer they can find is this theory of segregation and competition. They say they cannot reconcile the facts with any other theory and declare Standard domination is today merely a phantom, a ghostly survival to frighten children, but no longer a reality in form or substance

Marketing Territories Upset

At the time of the dissolution there were well defined marketing territories controlled by the several Standard units. Although there areas are still generally recognized by the marketing fraternity, in several sections they not only overlap, but the Standard companies are in fact competing in the very center of the territories which at one time were considered exclusively their own.

In the East the Standard Oil Co. of New York and the Atlantic Refining Co. compete with one another in several States. This applies to the sale of gasoline and kerosene, through bulk and service stations. In the sale of many other products, including fuel and gas oils, lubricating oils, wax and other less bulky products, not only these two companies, but the Standard Oil Co. of New Jersey compete with the so-called independents in an endeavor to increase their sales output. Governmental agencies and large private buyers have long since recognized this situation and in making known their prospective purchases get in touch with all the Standard units which distribute the products wanted.

In the Middle West, although the bulk and service station territories for the sale of gasoline, kerosene and other light oils are in a general way defined, the Standard units are active competitors in the sale of practically all other products. In this connection it is worthy of note that, not only in the Standard of Indiana and the Standard of Ohio territories, but throughout the United States these companies have competition from major organizations which are classed as independents in the public mind. In several instances these companies dominate a marketing area, having taken it from Standard units.

Great Rivals Arise

The concerns referred to include The Texas Co., Gulf Refining Co., Sinclair Refining Co., Pure Oil Co., Dutch-Shell interests, and marketing organizations of the Cities Service Co. All of these concerns have marketing organizations which cover wide areas in the United States with large export business. The Texas Co. is now said to have more widespread marketing territory than any of the Standard units.

The Gulf Refining Co. has bulk and retail stations in 24 States and many of its products, along with those of the other companies mentioned, are available in practically every consuming center of the entire world.

These companies have obtained their present position in oil markets by active competition with the Standard units during the past few years. The growth of these companies and many of the smaller concerns is indisputable evidence that the breach among the Standard companies has become wider and wider, permitting formidable competition to come in. It is impossible to conceive of such a development being permitted in the "old days." It requires no proof to state that these companies could not have expanded as they have during the past few years had there been an effective agreement among Standard companies which have lost whatever markets these com-

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Prosperity Assured for the Oil Industry

Margin Between Production and Consumption Vanishing; Buyers More Active and Optimism Steadily Increasing

By Andrew M. Rowley

Probably at no other time this year has the future of the petroleum industry seemed so bright to those actively engaged in it as it does at the present time. Just as the sun always seems brighter after a storm, so does the outlook in the oil business appear more roseate now following a period of depression which menaced the entire industry and held dire threats of engulfing many of those engaged in it. There are many features of the present situation which give solid foundation to the feeling of optimism which has been gradually gaining ground and which now is spreading even to those who were in quite a pessimistic mood until the past week or so.

The most important factor is the decline in the production of crude petroleum. That the period of overproduction which has been a menace during the greater part of this year and which was the basic cause of the depression, has passed definitely, there can be but little doubt. The decrease of 88,194 barrels in the average daily production of all fields of the United States during the past week indicates clearly the status of the flush fields whose yields caused this year to be abnormal in the history of the industry in that the production of the United States was greater than the consumption.

Big Slump at Powell

That this material decrease is not a temporary condition but represents the true trend of production is shown by reports from the fields which indicate this decline will be continued during this week and also that there are no new developments which will offset the decrease in the near future. The Powell Field in Texas, the one big factor in the overproduction situation since it started its rapid ascent early last summer, is dropping even more rapidly than it rose. Its production dropped 110,000 barrels daily inside of 10 days, a record hard to equal. On November 13 it produced 354,893 barrels. On November 24, its output was 244,000 barrels and on Monday of this week it was making less than 225,000 barrels with predictions made freely it would be down to 200,000 barrels or less by the end of this week.

The flush fields of California-Santa Fe Springs, Long Beach and Huntington Beach, while not dropping so rapidly, are declining steadily. Santa Fe Springs last week produced 216,000 barrels a day as compared to an output of 338,000 barrels daily for the week ending July 14. Long Beach reached a peak of production of 256,000 barrels during the week ending October 27 and had dropped to 240,000 barrels last week while Huntington Beach, which averaged 125,000 barrels daily during the week ending July 14, produced 72,000 barrels a day last week. The entire State of California shows a decline of about 125,000 barrels a day since it reached its peak the latter part of last July.

Purchasers More Active

The decline in production is making itself felt in ways which force even the most pronounced pessimist to realize the turn in the road has been passed and the way from now on is smooth and leads to prosperity. The major crude oil purchasing companies are becoming more active each day in their efforts to contract for available crude. The proration order placed in effect last July is now almost a thing of the past. It has not been lifted definitely by all of the companies but purchases have been increased so materially operators no longer are confronted with the problem of disposing of their oil. In a number of areas, the proration order has been cancelled. In others, it has been modified greatly and, from present ndications, it will have very little effect on present operations.

That the larger oil companies realize the period of overproduction is past and that the consumption of petroleum products is greater than ever before in the history of the industry and that this consumption is expanding steadily with increasing uses for petroleum, is indicated by plans being made by some of the larger organizations to protect themselves on future needs by contracts for crude supplies. It is no secret among men in close touch with the industry that a number of the larger companies are preparing to purchase much larger amounts of crude oil than they ever have done before.

Facts regarding consumption are well known. It requires no prophet to visualize what the demand for petroleum products will be during the next year. And any child who can add two and two can see that with the enormous demand which is expanding steadily and with production of crude showing a material decline, the present low prices for crude, gasoline and other petroleum products cannot continue very long.

Premiums Being Paid

The industry is entering the period of minimum consumption and yet reports from every section of the country indicate an unusually good demand for this time of the year. This demand is being reflected in some sections on crude prices by the offering and paying of premiums by some of the refining companies. One company in Pennsylvania contracted last week for crude at a premium of 10 cents a barrel above the posted prices. A premium of 5 cents a barrel is being paid in California and refiners in one section of Oklahoma are reported paying from 15 to 25 cents a barrel more than the posted price for crude of certain gravity. In the Gulf Coast area, operators are expecting premiums to be offered almost any day. Production there has fallen to a point where the refineries in that section have almost enough capacity to handle it alone while shipments from that section have been growing.

Crude purchasers are making every effort to contract for the Powell oil. They know the flush production there will not last long and that the output of the field is falling off rapidly. The Powell crude is of high gravity and in good demand. On November 19 the price of that crude was raised 25 cents a barrel and one of the largest companies in that district entered the market to buy crude.

Of almost equal importance to the decreasing production of crude is the enormous increase in demand for all petroleum products and the fact more uses are being found for these products. Consumption right now is greater than it ever has been at this time of the year in the history of the industry. This condition has obtained for some time and, under normal conditions affecting production, the problem which would have faced operators and refiners would not have been one of finding a market for the crude, but of finding crude for the market. This consumption this year has averaged around 20 per cent more than it did one year ago. It has held up exceptionally well since the peak period of summer consumption has passed and gives no indication of any radical decline at this time.

For instance, Government figures show the total consumption, including exports, of crude in September of this year averaged 2,194,081 barrels daily. During the past week production of crude averaged 2,171,834 barrels daily. During September imports of petroleum averaged about 200,000 barrels. Consequently, the margin between production and imports and consumption and exports is becoming less, while production is decreasing and consumption is not falling so rapidly.

Ordinarily, there is an enormous decrease in the consumption of petroleum products in the winter months. That decrease has not materialized as yet, while there is a far greater demand than usual for oil for uses which daily are becoming more popular and necessary. More persons are using their automobiles in winter months now than ever before. In addition, the use of oil as fuel in homes, apartments and office buildings is increasing by leaps and bounds. For instance, the demand in the Chicago territory for burning oils for home use has become so great the Standard Oil Co. of Indiana has recently placed on the market a domestic oil burner and is making a special oil for use in this burner. There are now 18,000 installations of fuel oil burners in homes, apartments and office buildings in Chicago, 4,000 in Milwaukee and 3,000 in St. Louis, while the number of these installations is growing rapidly each week. These burners consume from 1,500 to 300,000 gallons each, annually.

Prosperity Seems Assured

Making predictions as to the future of the petroleum industry is much like prophesying the weather in Texas. There is an old saying in Texas that a man who attempts to say what the future weather will be is either a fool or a newcomer. The same thing might be said of predicting what will happen in the oil business. Few persons had any idea whatever the flush fields of California would produce the vast quantities of oil which flooded the market this year and the Powell Field of Texas was unthought of, even as early as last spring.

Yet, based on the present known facts regarding production and consumption, there is nothing in sight now which will prevent the oil industry from entering into one of the greatest periods of prosperity in its history shortly after the advent of next spring. If the economic law of supply and demand is permitted to operate without interference, consumption certainly will overtake production and force the withdrawal of large quantities of crude and refined products from storage. This will necessitate more development work to bring production up to the requirements of consumption and the paying of higher prices for crude and its refined products.

There are two features which the oil men themselves must guard against. Either might cause a return to the depression which has characterized the industry during much of the past year. The first is a premature boom in development work which might flood the market with crude before the flush fields had fallen low enough to necessitate withdrawal of crude from stocks and the second is governmental interference with the industry. Politics is a most popular pastime right now and one of the most favorite objects on which demagogues hope to ride to office is the ranting against the oil business. The industry should guard against these men who are

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ACCURATE CRUDE PRODUCTION FIGURES OF VITAL IMPORTANCE TO INDUSTRY NOW

Accurate figures on the production of crude petroleum in all fields of the United States are especially vital to everyone conected with the oil industry at this time. It is doubtful if there ever was a time in the history of the oil business when accurate figures on the production of crude were of such great importance as now. Oil men everywhere are planning their future work on the basis of the trend of the output of the various major producing areas. A definite decline in production with continued good demand and large consumption means prosperity in the near future and oil men want to know these facts that they may be prepared to take advantage of the change in conditions. They want to be absolutely sure they can rely on the production figures. They are entitled to know which figures are accurate and which are not up-to-date.

For the week ended November 17, The Oil and Gas Journal reported an increase in the average daily production of crude in all fields of the United States of 61,478 barrels. Production figures, supposed to cover this same period, as given out by an organization of which a large number of oil men are members, showed a decline in production of 14,450 barrels daily. This great diversity caused widespread comment throughout the United States.

The figures published each week by The Oil and Gas Journal are obtained by our own trained correspondents located in the centers of oil field activity throughout the country. They are as accurate as it is possible for an estimate to be. In checking the figures given out by the other organization it was found their figures for the Powell Field undoubtedly were one week old and were for the week ending November 10 instead of November 17 as stated by them. It was during this week the Powell Field was opened up and attained its peak. On November 13 production at Powell was 354,893 barrels, the highest ever reached there. The Oil and Gas Journal showed an increase in the average daily production at Powell during that week old and were for the week ending November 10 instead of November barrels daily, this in the face of the opening up of the field and its reaching its peak production. It is significant to note that for the previous week, or for the week ending November 10. The Oil and Gas Journal reported a decrease of 21,000 barrels daily at Powell.

Oil Securities Rule Strong for Week

Best Demand Since the Upward Movement of the First Two Months of the Year Follows Buoyant Conditions

By N. O. Fanning
Room 525 No. 30 Church St., New York

NEW YORK, Nov. 26.—Oil securities ruled strong during the week, the advance which started on a small scale the week before gaining momentum, with few reactionary periods. On the New York Stock Exchange the advances in the oil group ranked from five to ten points. On the curb some of the Standard Oil issues made even larger gains, particularly the high-priced ones. Prairie Oil & Gas topped the 200 mark; Ohio Oil was also well bought above 60.

The oil stocks as a whole have not enjoyed such a demand since the upward movement during the first two months of the year came to an end. The demand was not "spotty" but extended to the issues of the big Standard Oil refining and marketing units, the issues of the Mexican oil companies and those of Mid-Continent producers and refiners.

Several explanations were advanced for the improved condition of the oil securities markets. First was the continued decline in crude oil production in the Powell Field of Texas and the flush fields of southern California, and the belief that crude oil prices will advance as a result in the very near future. Second was the all-around improvement in industrial activity, with indications of a continued increase in the demand for oil products. Third was the settlement, at least temporarily, of the outstanding differences among the entente. The absence of further unfavorable events in the oil business was also believed to be a factor in the upturn in oil stock prices. Another explanation, by no means to be despised, was that oil securities as a group had been largely "oversold," and that an advance from the low levels of the year was to be expected, if for no other than technical reasons.

Financial Reports Fair

Doubtless the financial district during the past few months had been led to believe that the oil industry as a whole was in an almost desperate condition, and that it would take years for conditions to become straightened out once more. Professional "bears" spread stories regarding faulty leadership, as they called it, and it is almost certain that many holders of good oil stocks were induced to sell under the misconception that the industry did not have the power to meet unusual conditions.

The fact that conditions in the oil business have become somewhat better does not mean that oil stocks should experience a "boom." The statement of the Standard Oil Co. of New Jersey that a fair balance between demand and supply in the oil industry would probably not come until the middle of 1924, indicates the belief that improvement will be gradual, viewing the situation from every angle, including production, stocks and consumption. There is yet an abnormal stock of both crude and refined petroleum to be worked off before conditions will become "normal."

The financial reports of many of the oil companies for the nine months of 1923, which have been published recently, show in the main that the substantial companies will about break even after the payment of regular dividends. Of course there are weak spots. The passing of the dividend on Crescent Pipe Line probably represents the worst side of the situation as far as the stronger oil companies are concerned. But the refining and marketing companies have not fared so badly, certainly not to the extent of calling this year one of terrible depression like that of 1921. This year the refiners (and consumers) have enjoyed the benefit of low crude oil prices. In 1921, refiners suffered because of the need of selling products at a low price based on crude at its peak.

New Financing Probable

Indications are that some new financing will be effected by several oil companies if the improvement in oil securities prices continues. Rumors have gone around that the big Standard Oil units in some cases contemplated new financing, but this has been denied. The General American Tank Car Co. has sold through bankers $3,000,000 equipment trust notes, and this is the only new offering to report for the week.

If there is a flood of new offerings on the part of petroleum companies it will be surprising. Much new financing was accomplished early this year, when conditions were much worse, and it is doubtful if the larger companies will seek new funds on the verge of improved earnings.

That a few companies will be in the market, however, seems probable.

The Oil and Gas Journal's average price of 20 representative oil stocks listed on the New York Stock Exchange advanced on November 20, to 45.26, up 1.42 over the preceding week, and a gain of 3.83 over the low of 41.43 reached on September 18, last. The November 20 average is the highest recorded since July 24. The high record for the average in 1923 was 62.17 on March 6.

Directors of the Pennok Oil Co. have declared an extra dividend of 20 cents a share, in addition to the regular quarterly 20-cent dividend. Both are payable December 22, to stockholders of record December 15.

A certificate of increase in the capital stock of the Sinclair Crude Oil Purchasing Co. from $50,000,000 to $65,000,000 was filed at the State Department of Delaware.

Among the rumors regarding the Standard Oil Co. of New Jersey was one declaring that the company was seeking a controlling interest in the Tide Water Oil Co. As a result of numerous inquiries the company issued the following statement:

"There is absolutely no truth in the story. This company has not acquired either directly or through individuals or brokerage firms, nor is it planning to acquire, any shares in the Tide Water Co. in addition to its minority interest held for many years. Standard Oil Co. of New Jersey regrets that its name should be featured in fake stories apparently instigated by stock market speculators."

Phillips Petroleum Co.

Phillips Petroleum Co. declared regular quarterly dividend of 50 cents, payable January 2 to stock of record December 14.

President Frank Phillips issued the following statement:

"Phillips Petroleum Co. for 10 months ended October 31, 1923, reports net earnings of $9,285,647. These figures are after deducting more than $3,000,000 inventory adjustment, which brings inventory down to present market or below, and after deducting all fixed charges, including reserves and federal taxes, but before depletion and depreciation on properties, for which correct figures under Government regulation cannot be made available until after the end of the year.

"It is difficult to estimate depletion and depreciation for a company which is constantly discovering new properties. However, it is anticipated that after making maximum allowable deductions for depletion and depreciation at least twice the dividend requirements will be earned during the year.

"Although more than $3,000,000 has been charged off against current earnings covering inventory adjustment, this is not a realized loss as the company's storage is intact and will undoubtedly remain so until higher prices prevail. The company is earning a very substantial amount independent of oil and gasoline. Its known underground reserves will be far greater at the end of 1923 than at the beginning of the year due to discovery and partial development of new properties."

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock	Par	‡Dividend Rate	Closing Quotations Nov. 27	Nov. 20	Range High	1923 Low
1.	Associated Oil	25	6	26¼	26	27⅛	24⅜
2.	Atlantic Refining, common	100	4	118½	106	160	98¾
3.	Barnsdall "A"	25	..	14½	12⅝	25	9⅞
4.	Caddo Central Oil	..	..	2	*1	9¾	1½
5.	California Petroleum, common	25	7	22⅞	22¼	29⅛	17⅛
6.	Cosden & Co., common	..	..	30⅛	27⅞	62¼	22⅝
7.	General American Tank	..	†3	47	48	71⅞	40
8.	General Asphalt	100	..	32⅝	32⅛	54	23
9.	Houston Oil	100	..	52½	51	78	40¾
10.	Independent Oil & Gas	10	..	*5¼	4¼	11¼	3⅝
11.	Indiahoma Refining	25	..	*2⅞	1⅝	9	1¼
12.	Indian Refining	10	..	*5¼	*5⅛	8½	5
13.	Invincible Oil	50	..	10⅝	8⅝	19¼	7⅛
14.	Maracaibo	..	..	22½	20½	22½	16
15.	Marland Oil	..	..	26¼	23½	59⅝	18½
16.	Mexican Seaboard	..	..	14½	14	19⅜	5⅜
17.	Middle States Oil	10	..	5½	4⅜	12¼	4⅜
18.	National Supply	50	6	64	58⅜	59⅜	54
19.	Pacific Oil	..	†2	41⅞	39⅛	48⅞	31½
20.	Pan-American, common	50	16	61⅛	60	93½	53
21.	Panhandle Prod. & Ref.	..	..	*2	1½	6¼	1¼
22.	Phillips Petroleum	..	†2	30⅝	26⅝	69⅝	19⅜
23.	Pierce Oil, common	25	..	2⅜	2¼	6	1½
24.	Producers & Refiners	50	4	23	18⅜	58¼	17⅛
25.	Pure Oil Co., common	25	6	20¼	17⅛	32	16¼
26.	Royal Dutch, N. Y., sh.	13.40	2.62	49⅞	48⅜	55½	40½
27.	Shell Transport	10	x92½	*33½	32½	41¼	29½
28.	Shell Union, common	..	†1	15	14½	19¾	12⅜
29.	Simms Pet.	10	..	10½	9⅝	16⅜	6½
30.	Sinclair Consolidated, common	..	†2	22⅝	19⅛	39⅜	16
31.	Skelly Oil	25	..	20½	17	35	12⅛
32.	Standard of California	25	8	56	55	64⅛	47⅛
33.	Standard Oil of N. J.	25	4	35¼	33⅛	44¾	30⅞
34.	Standard of New Jersey, pfd.	100	7	115⅝	*117	118¼	114¾
35.	Superior Oil	..	..	*2⅝	*2	6⅝	2
36.	The Texas Co.	25	12	41¼	39⅝	52⅞	34⅝
37.	Texas & Pacific Coal & Oil	10	..	8½	7⅛	24⅝	5½
38.	Tide Water Oil	100	4	114½	109	144	94
39.	Transcontinental	..	..	3⅝	2⅛	14½	1¼
40.	Union Tank, preferred	100	7	*108	*108½	114	106
41.	White Eagle Oil & Ref.	..	2¼	22⅝	22	30⅜	20⅛
	Standard Oil Stocks						
42.	Anglo-American Oil	5	15	15⅝	*14	19¾	13½
43.	Borne Scrymser	100	12	*135	*135	153	110
44.	Buckeye Pipe Line	50	14	73½	70	94	70
45.	Chesebrough Mfg., com.	100	14	*228	*230	238	205
46.	Continental Oil	25	8	39⅞	*37	50	32½
47.	Crescent Pipe Line	25	..	*16	*12½	25	16
48.	Cumberland Pipe Line	100	12	114	112	116	80
49.	Eureka Pipe Line	100	8	99	*87	117¼	88
50.	Galena-Signal, common	100	4	*63	60½	78	55
51.	Humble Oil & Ref.	25	4.8	36	*33½	41	28¼
52.	Illinois Pipe Line	100	16	145	*128	171	115
53.	Imperial Oil, Ltd.	25	16	104⅜	100	123	92
54.	Indiana Pipe Line	50	16	*84	*78	103	81
55.	Intl. Pet. Co.	x50	..	15⅝	15½	24¾	13¼
56.	Magnolia Pet.	100	4.5	138	131	166	123
57.	National Transit	12.50	16	*22½	*20	29	19½
58.	New York Transit	100	10	*90	*84	138	86
59.	Northern Pipe Line	100	25	*101	100½	111	96
60.	Ohio Oil Co.	25	4	66	62½	85⅝	48⅜
61.	Penn-Mex Fuel	25	..	*27½	*19	28	10½
62.	Prairie Oil & Gas	100	8	218	194	272	152
63.	Prairie Pipe Line	100	8	98	94½	117	93
64.	Solar Refining Co.	100	15	*178	178	212	161
65.	Southern Pipe Line	100	16	*91	*80	116	90½
66.	South Penn Oil	100	..	128	111	196	100
67.	South West Pa. Line	100	8	*76	*75	89	66
68.	Standard of Indiana	25	10	59½	56¼	69⅞	49¼
69.	Standard of Kansas	25	8	41½	*39	56¼	36½
70.	Standard of Kentucky	25	16	97¾	99	109½	76
71.	Standard of Nebraska	100	20	*210	210	280	186
72.	Standard Oil of N. Y.	25	5.6	42⅝	41⅝	49¾	35½
73.	Standard of Ohio, common	100	10	281	282	317	270
74.	Swan & Finch	100	..	*25	*25	38	21½
75.	Vacuum Oil	25	10	54⅝	52⅜	55½	40
76.	Washington Oil	10	..	*22	*20	28	20¼
	Miscellaneous Stocks						
77.	Cities Service, banker's shares	..	†21	13⅞	*13¼	18½	12⅜
78.	Gulf Oil Corp. of Pa.	25	6	*57¼	55½	69¼	45⅝

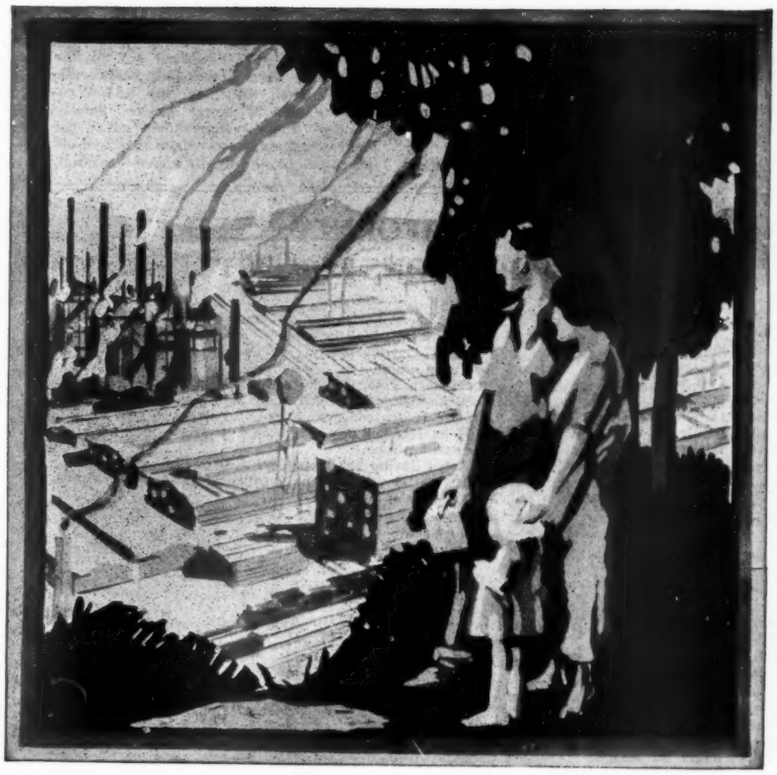
*Bid, no sales. †In dollars. ‡6 per cent in cash and 15 per cent stock dividend declared; now being paid in scrip. §The figures carried in this column are kept up-to-date as far as possible but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange weekly was as follows:

Nov. 27	47.74	Oct. 16	42.80	Sept. 4	44.06
Nov. 20	45.26	Oct. 9	43.29	Aug. 28	44.18
Nov. 13	43.84	Oct. 2	43.53	Aug. 21	44.24
Nov. 5	42.60	Sept. 25	42.48	Aug. 14	43.39
Oct. 30	41.66	Sept. 18	41.43	Aug. 7	43.87
Oct. 23	42.42	Sept. 11	44.78	July 31	42.58

ARGENTINE OIL IMPORTS

The importations of petroleum products into Argentina during the first seven months of 1923 were as follows: Crude for refining, 50,513 metric tons; fuel oil, 372,985 metric tons; naphtha, 207,500 cases, 7,114 metric tons, and 2,982 barrels; kerosene, 1,727,807 cases and 5 barrels; gasoline, 307,301 cases.



FAITH

Faith has built Empires. Faith has built Industry. Faith is the foundation of our existence.

The workingman strives because he has faith in those who minister to his future. The modern executive provides better working conditions for those under his care because he has faith in the principle of "Good begets Good."

His faith yields a return of faith on the part of his workers manifested to him in the form of their greater endeavor and purpose.

Many of the largest organizations in the business world are bettering working conditions for their employes through Group Insurance. The benefits that have accrued to all concerned have been shown to be permanently lasting.

THE TRAVELERS INSURANCE COMPANY
Hartford
L. F. BUTLER, PRESIDENT
THE TRAVELERS INDEMNITY COMPANY
Connecticut

THE TRAVELERS

ACCIDENT LIFE LIABILITY HEALTH AUTOMOILE STEAM BOILER COMPENSATION GROUP BURGLARY
PLATE GLASS AIRCRAFT MACHINERY

IS DISSOLUTION OF STANDARD REALITY?

(Continued from Page 24)

panies have gained. It is not unusual to see all the above-named companies competing with one another and several Standard companies to secure a large order for refined products.

Competition Within Standard

The competition of these companies, fully as strong as many of the Standard companies, unquestionably has been the prime factor in bringing about independent action of the latter, so noticeable during the past year. Confronted constantly by competition in producing, refining and marketing oil by these companies, the Standard units have apparently found it impossible to pursue a policy which would protect all. This feature is mentioned, because in the public mind "Standard" simply means power to control. The public has a conception of a mammoth organization adequately protected in all factors entering into the production of petroleum products so that it is in a position to stamp out all competition at will. As a matter of fact, as is known to all close students, they have had a great difficulty to hold their own, due to the competition of these companies, and in the scramble, incident to the survival of the fittest, they have not hesitated to cut each others' throats whenever and wherever it was deemed necessary.

In the Southwest the Magnolia Petroleum Co. and the Humble Oil & Refining Co., both Standard units, have their own bulk and service stations at the same points in many instances. At several points these two companies will be found along with The Texas Co., Sinclair Refining Co., Gulf Refining Co., and the Cities Service marketing subsidiaries. Anyone who has kept in touch with tank wagon markets in the Southwest, is aware of the competitive situation which, on numerous occasions, has resulted in gasoline being sold under 10 cents to the consumers. Although these so-called price wars are generally caused by the competition of newcomers in the marketing end of the oil business, it is a known fact that these major marketing organizations have resorted to every known method of legitimate salesmanship to make the position of their companies more secure in the territories in which they operate. So keen has this competition become that in many instances it has reached the destructive state which means, in the final analysis, further changes in the marketing territories.

Export Case Cited

The export situation is largely the same as the domestic. Up until the past few years, in the words of an official of one of the large companies, the sale of refined products to foreign buyers was "a cut and dried transaction" insofar as American companies were concerned. There was little, if any, competition among the Standard units. In fact, practically all the export business was distributed through one concern which handled its own sales and those of other Standard companies. Recently on several occasions the export trade on one or more products has been termed "demoralized." It has been openly charged by other export concerns that the endeavor of Standard companies to take business from one another was responsible for these low export prices which admittedly were below the cost of production. During the overproduction period of the past few months there has been an almost panicky effort on the part of the major oil marketers to dispose of part of their surplus and price concessions have been the rule, regardless of what companies are competing.

The overproduction period just mentioned has served to emphasize this independence among the Standard companies. Recently, almost every week, there has been fresh evidence of this situation. In an effort to reduce their losses to a minimum, and in taking advantage of situations for further profit which an overproduction period always brings, several Standard companies in their dealings with one another have apparently pursued the policy of "after me you come next." The industry during the past year has witnessed the severing of old Standard connections and the promulgations of new alignments so surprising that it has not yet been able to grasp their full meaning.

More Changes Coming

The old alignments have been retained when they stood the test of expediency but the former customs of mutual protection no longer prevails. Important competitive changes in production, refining and marketing organizations have occurred and it is apparent that still more important shifts will be made before stable conditions return.

The changes in the Mid-Continent area are commonly known. The Sinclair-Standard of Indiana connection is history but it is becoming increasingly important when consideration is given to the present status of the industry. The crude oil deliveries of the Prairie Oil & Gas Co. for October were 80,673 barrels daily, as against 189,291 barrels for the same month of last year. Therein, according to general opinion, lies indisputable evidence of the independent action which Federal and State lawmakers think so essential to public interest, but which is fraught with danger to everyone concerned, in the opinion of many close students of industrial developments.

Despite the connections of years, the Standard units in the East and Middle West, due to the availability of crude supplies from the California and Wyoming Fields at lower prices, largely dropped their connections with the Prairie company from whom they had obtained the bulk of their raw material. Well informed circles now believe that this new arrangement will be largely permanent, thus leaving one of the largest producers and marketers of crude oil without an adequate outlet for its output. Proof is not required to state that the apparent present plight of this company would not have been permitted even a year or so ago.

Not a Temporary Shift

Although this situation might be explained as an unavoidable and fundamental development resulting from a large and unexpected production on the west coast which left the Standard interests powerless to protect its most important Mid-Continent connection, this reasoning fails to explain certain happenings. Despite the constantly decreasing deliveries of the Prairie to Standard refinery customers in the East and Middle West, the Standard Oil Co. of New Jersey saw fit in the spring to purchase crude and refined products of a total value of $30,000,000 to $35,000,000. The contracts entered into at that time extended from one to two years, a period long enough to assure that the contracts did not represent an emergency measure.

More recently, the Atlantic Refining Co. closed a contract with the Sinclair Crude Oil Purchasing Co. for 7,000,000 barrels of crude for delivery over 1924 and 1925. There have been other important transactions, some of which lack official confirmation, but which are generally credited in oil circles.

As a result, the Mid-Continent has had the most unsettled crude markets of its history during the past six months. At the present time there are three crude price schedules as posted by the major purchasing companies. The presumption is that they represent values to these companies arrived at without regard to their worth to other buyers, except as is necessary in a competitive situation Some major buyers are taking 100 per cent runs, while others have found it expedient to limit their purchases to what they are able to sell.

Case of the Prairie

As a further development of the situation we find the Prairie Oil & Gas Co. apparently forced to seek new market connections, which many believe in the end will mean that the company will have an entirely new outlet for the crude it produces and buys and has marketed in the past to distant buyers using the lines of the Prairie Pipe Line Co. to transport it. In spite of the temporary aspects of the present overproduction of crude, which, when ended will mean that Mid-Continent crude will once more be highly desirable, the important Standard units have allowed this situation to develop willingly or otherwise.

Veterans among the producers state the situation in regard to crude buying is without parallel. In practically every important field in the United States two or more Standard companies, in addition to such concerns as the Gulf, Texas, and Sinclair, have pipe line connections. Up until the past year it was customary for all crude buyers to follow almost to the letter any policy established by a major buying company. This was especially true of the Standard units and other large buyers. There have been many deviations from this rule during the past six months. In the Mid-Continent area there have been cases in which one Standard company has quickly taken up one crude connection which another unit had been forced temporarily to drop, either in part or as a whole, due to the overproduction period. Independent producers have had the experience of having representatives of two or more Standard companies bidding against one another in offers to buy the crude output of the company. The price offered for current output is generally the same, but other important details of the contracts often vary. At the present time, marked with a gradual return to 100 per cent runs from leases by all major purchasing companies, this competition is becoming increasingly evident and it is predicted that unless new fields are brought in, the industry will see the greatest scramble for crude in its history, with the keenest competition coming from Standard units

SUMMARY OF CALIFORNIA FIELD OPERATIONS FOR OCTOBER, 1923

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for October amounted to 24,576,400 barrels, an average of 792,787 barrels per day. This is a decrease of 65,963 barrels per day under September production.

Stocks increased during the month 2,852,941 barrels. The total stocks at the end of the month were 88,349,550 barrels. The total stock increase for 1923, up to October 31, was 27,164,622 barrels. Indicated consumption for October was 21,723,459 barrels, an average of 700,757 barrels per day. This is a decrease of 78,900 barrels per day under September consumption.

Ninety-nine wells were completed during the month with an initial daily production of 127,758 barrels, compared with 93 wells completed during September with an initial daily production of 139,960 barrels.

PRODUCTION

(Figures for Production and Stocks are in barrels of 42 Gallons)

District—	Barrels Per Month	Daily Average Oct., '23	Sept., '23	Oct., '22
Kern River	465,599	15,019	19,002	20,002
McKittrick	193,532	6,243	6 070	6,536
Midway-Sunset	2,298,350	74,140	74,645	78,872
Elk Hills	714,976	23,064	22,987	24,404
Lost Hills-Belridge	109,314	3,526	3,792	6,723
Coalinga	426,611	13,761	14,193	17,883
Wheeler Ridge	14 154	456	509	.....
Watsonville	1,783	57	58	61
Santa Maria	248,255	8,008	8,161	8,214
Summerland	4,513	146	146	150
Ventura-Newhall	304,889	9,835	10,090	9,894
Los Angeles-Salt Lake	101,297	3,267	3,095	3,707
Whittier	51,423	1,659	1.668	1,835
Fullerton	330,262	10,654	11,291	9,785
Coyote	61,857	1,995	2,558	19,398
Santa Fe Springs	8,004,471	258,209	314,662	58,637
Montebello	318.244	10,266	10,490	14,617
Richfield	464,645	14,988	16,169	20,260
Huntington Beach	2,445,809	78,897	89,628	41,168
Long Beach	7,580 339	244,527	240,918	89,654
Torrance (Redondo)	394,395	12,722	7,417	1,088
Compton	41,682	1,345	1,193	.....
Total	24,576,400	792,787	858,750	432,885
Total September	25,762,487	858 750		
Decrease	1,186,087	65,963		

FIELD, REFINERY, PIPE LINE AND TANK FARM STOCKS OF CRUDE, RESIDUUM AND TOPS

	Oct. 31, 1923	Sept. 30, 1923	Oct. Stock Increases	Oct. 31, 1922
Heavy Crude, heavier than 20° A.P.I. including residuum	42 585,664	42,413,027	172,637	40,567,088
Refinable Crude, 20° A.P.I., and lighter	33,659,232	31,584,259	2,074,973	*17,002,744
Tops	12,104,654	11,499,323	605,331	.....
Total	88,349,550	85,496,609	2,852,941	57,569 832
		Oct. 31, '23	Sept. 30, '23	Oct. 31 '22
Total quantity of above products held at refineries		28,222,460	26,660,833	9,828,857
Total quantity of above products held in fields, pipe lines and tank farms		60,127,090	58,835,776	47,740 975
Total stocks, as above		88,349,550	85,496,609	57,569,832

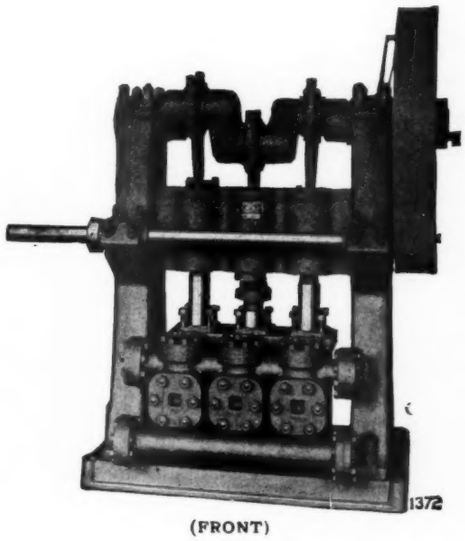
*Includes tops.

DEVELOPMENT

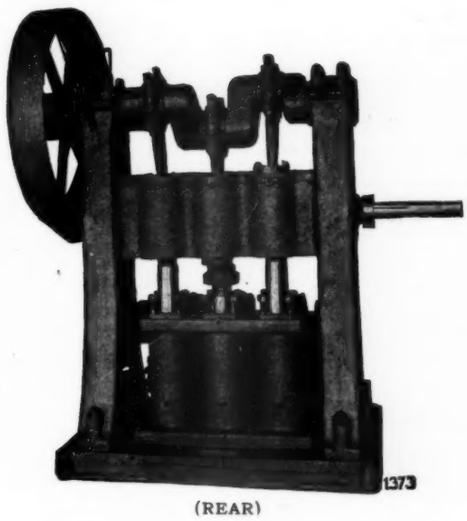
District—	New Rigs Up	Drg.	Comp.	Daily Init. Output	Active Prod.	Abd.
Kern River	1	1	...	.....	1,778	...
McKittrick	..	6	...	.....	283	1
Midway-Sunset	14	49	10	3,022	2,142	...
Elk Hills	3	9	1	2,500	90	...
Lost Hills-Belridge	..	2	...	.....	246	...
Coalinga	..	6	...	.....	677	4
Wheeler Ridge	1	9	...	.....	5	...
Watsonville	..	...	...	.....	6	...
Santa Maria	..	3	...	.....	327	1
Summerland	..	...	...	.....	135	...
Ventura-Newhall	4	31	...	.....	541	1
Los Angeles-Salt Lake	..	...	...	.....	634	...
Whittier	..	...	...	.....	174	...
Fullerton	..	4	...	.....	384	...
Coyote	..	4	...	.....	94	...
Santa Fe Springs	7	159	29	54,872	247	6
Montebello	..	6	...	.....	121	...
Richfield	..	8	1	75	175	1
Huntington Beach	2	79	10	4,245	222	7
Long Beach	3	216	36	53,909	289	9
Torrance	51	82	12	9,135	46	...
Compton	5	13	...	.....	1	...
Miscellaneous drilling	3	59	...	.....	....	4
Total October	94	745	99	127,758	8 617	33
Total September	104	805	93	139,960	8,922	37
Decrease	10	60	*6	12,202	305	4
Average for year 1922	115	605	67	43,700	9.410	17
Average for year 1921	90	536	57	15,631	9,425	14
Average for year 1920	77	403	49	14,125	9,299	13
Average for year 1919	58	340	47	9,572	8,774	18
Average for year 1918	50	362	50	10,577	8,210	13

*Increase.

"THE WALLFLOWER"



(FRONT)



(REAR)

Some of us call her that because her back is so made that she sits right up against a wall, out of the way. An unused corner is just what she craves.

But she is not backward, Oh, no. You should see her flirting with A Press. Gauge—the way she keeps the old boy up around 900 lbs. is wonderful to see. And she doesn't allow him to dance either,—holds him right up to the mark.

Our Engineering Department says it is a 4 x 8" Vertical Triplex Power Pump of the low clearance type, for either belt or attached motor drive, for 900 lbs. working pressure. They invite particular attention to the fact that the rear side is without anything that might require attention. Everything is easily accessible from the front. Fluid cylinders with valve chests removable from the main frame.

Description, photographs and blue prints on request

NATIONAL TRANSIT
PUMP AND MACHINE COMPANY
OIL CITY, PENNA.

District Offices: New York, Philadelphia, Pittsburgh, Cleveland, Kansas City, Houston and Denver

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Nov. 27	Nov. 20	Nov. 13
50-52 450 end point (Naphtha)	.05½ .05¾	.05¾ .06	.05¾ .06
56-58 450 end point	.05½ .05¾	.05½ .06	.05½ .06
58-60 437 end point (New Navy)	.06½ .06¾	.06 .06½	.06¼ .06½
60-62 400 end point	.07½ .07¾	.07½ .07¾	.07¼ .07¾
64-66 375 end point	.08½ .08¾	.08½ .09	.08½ .09
68-70 360 end point	.09½ .10	.09¾ .10¼	.10 .10½
OKLAHOMA (Group 3)—			
48-52 450 end point (Naphtha)	.05½ .05¾	.05¼ .05¾	.05¾ .06
56-58 450 end point	.06 .06¼	.06 .06¼	.06 .06¼
58-60 437 end point (New Navy)	.06⅜ .06¾	.06⅛ .06½	.06⅛ .06½
60-62 400 end point	.07½ .07¾	.07¼ .07½	.07½ .07¾
64-66 375 end point	.08¼ .08½	.08¼ .08½	.08½ .08¾
68-70 350-365 end point	.09¾ .10	.09¾ .10	.10 .10½
KANSAS—			
58-60 437 end point (New Navy)	.06¾ .07	.06¼ .06½	.06¼ .06½
NORTH TEXAS—			
58-52 450 end point (Naphtha)	.05 .05¼	.05¼ .05¾	.05¾ .06
50-52 440 end point (Naphtha)	.05¼ .05½	.05½ .05¾	.05¾ .06¼
56-58 450 end point	.06 .06¼	.06 .06¼	.06 .06¼
58-60 437 end point (New Navy)	.06¼ .06½	.06 .06¼	.06⅛ .06½
60-62 400 end point	.07¼ .07½	.07¼ .07½	.07¼ .07½
64-66 390 end point	.08 .08¼	.08 .08½	.08 .08½
64-66 375 end point	.08¼ .08½	.08¼ .08½	.08¼ .08¾
NORTH LOUISIANA—			
56-58 450 end point	.06 .06½	.06 .06¼	.06 .06¼
58-60 437 end point (New Navy)	.06¾ .07	.06¼ .06½	.06¼ .06½
60-62 400 end point	.07¾		
64-66 400 end point	.07¾ .08	.07¾ .08	.07¾ .08
64-66 390 end point	.08½ .08¾	.08¾ .09	.08½ .08¾
ARKANSAS—			
58-60 450 end point	.06½ .06¾	.06½ .06¾	
58-60 437 (New Navy)	.06¾ .07	.06¾ .07	
64-66 375 end point	.08½ .09	.08½ .09	
ROCKY MOUNTAIN STATES—			
*58-60 437 end point (New Navy)	.09½	.09½	.09½
PENNSYLVANIA—			
52 Naphtha	.09½	.09½	.09½
54 Naphtha	.09¾	.09¾	.09¾
56 Gasoline	.10	.10	.10
58 Gasoline	.10¼	.10¼	.10¼
60 Gasoline	.10¾	.10¾	.10¾
62 Gasoline	.11	.11	.11
64 Gasoline	.13	.13	.13
66 Gasoline	.16	.16	.16
68-70 Gasoline	.17	.17	.17

*Colorado common points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Nov. 27	Nov. 20	Nov. 13
Grade A, 72-78 under 375 e.p., rec. 90%	.06½ .06⅜	.06¼ .06¾	.06¾ .07¼
Grade B, 76-82, 375 end point, rec. 85%	.05⅛ .06¼	.06 .06½	.06½ .07
Grade C, 80-88, 350 end point, rec. 78%	.05½ .05¾	.05¾ .06	.06 .06½
OKLAHOMA (Group 3)—			
Grade A, 72-78, under 375 e.p., rec. 90%	.05¾ .06	.06¼ .06½	.06½ .06¾
Grade B, 76-82, 375 end point, rec. 85%	.05½ .05¾	.06 .06¼	.06¼ .06½
Grade C, 80-88, 350 end point, rec. 78%	.05 .05¼	.05½ .05¾	.06 .06¼
Grade D. 88-92, 350 end point	.05 .05¼	.05½ .05¾	.06 .06¼
NORTH TEXAS—			
80-84 compression	.05 .05¼	.05¼ .05¾	.05¾ .06¼
84-90 compression	.05 .05¼	.05¼ .05¾	.05¾ .06¼
72-76 absorption	.05½ .05¾	.06 .06½	.06¼ .06¾
76-82 absorption	.05½ .05¾	.06 .06½	.06¼ .06¾
NORTH LOUISIANA—			
Grade B	.06 .06¼	.06 .06¼	.07
Grade C	.05¾ .06	.05¾ .06	.06¾

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Nov. 27	Nov. 20	Nov. 13
56-62 437 end point	.06 .06⅛	.06 .06¼	
60-62 450 end point	.06 .06⅛	.06 .06¼	.06¼ .06½
64-66 450 end point	.06⅛ .06¼	.06 .06¼	.06¼ .06½
OKLAHOMA (Group 3)—			
60-62 450 end point	.05¾ .06	.05¾ .06	.06 .06¼
64-66 437 end point	.05¾ .06¼	.06 .06¼	.06¼ .06½
68-70 430-435 end point	.05¾ .06¼	.06 .06¼	.06¼ .06½
NORTH TEXAS—			
58-62 440 end point	.06 .06⅛	.06 .06⅛	.06 .06⅛
58-60 450 end point	.06 .06⅛	.06 .06⅛	.06 .06⅛
PENNSYLVANIA—			
*60-62	.10	.10	.10
*64-66	.10	.10	.10
*66-68	.10	.10	.10
*68-70	.10	.10	.10

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Nov. 27	Nov. 20	Nov. 13
41-43 water white Kerosene	.04⅜ .04½	.04¼ .04½	.04 .04¼
42-44 water white Kerosene	.04½ .04¾	.04½ .04¾	.04¼ .04½
OKLAHOMA (Group 3)—			
41-43 water white Kerosene	.04½ .04¾	.04¼ .04½	.04⅛ .04¼
42-43 water white Kerosene	.04½ .04¾	.04½ .04¾	.04⅜ .04⅝
44-46 Kerosene Distillate	.05¼ .05½	.04¼ .05½	.05¼ .05½
KANSAS—			
41-43 water white Kerosene	.04¾ .05	.04½ .04¾	.04½ .04¾
NORTH TEXAS—			
41-43 water white Kerosene	.04½ .04¾	.04¼ .04½	.03¾ .04
41-43 prime white Kerosene	.04¼ .04½	.04 .04¼	.03½ .03⅝
40-42 prime white Distillate	.04 .04¼	.03¾ .04	.03¼ .03½
42-44 water white Kerosene	.04¾ .05	.04½ .04¾	.03¾ .04
NORTH LOUISIANA—			
41-43 prime white Kerosene	.04¾	.04½ .04¾	.04½ .04¾
42-43 water white Kerosene	.05	.04¾ .05	.04½ .04¾
ARKANSAS—			
41-43 water white Kerosene	.04½ .04¾	.04½ .04¾	
42-44 water white Kerosene	.04¾ .05	.04¾ .05	
ROCKY MOUNTAIN STATES—			
*40-42 prime white Kerosene	.07½	.07	.07
PENNSYLVANIA—			
43 Kerosene prime white	.06¾	.06¾	.06¾
45 Kerosene water white	.07	.07	.07
46 Kerosene water white	.07¾	.07¾	.07¾
47 Kerosene water white	.08	.08	.08
36 Miners' Neutral	.07	.07	.07

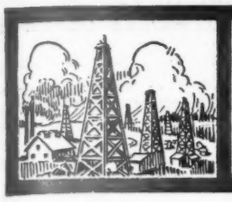
*Colorado common points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Nov. 27	Nov. 20	Nov. 13
24-26 Fuel Oil (sellers' cars, Group 3)	.67½ .72½	.70 .75	.70 .75
22-24 (El Dorado)	.60 .67½	.60 .65	.65 .70
18-20 (Smackover)	.55 .60	.57½ .62½	.60 .65
32-36 Gas Oil	.02¼ .02⅜	.02¼ .02⅜	.02⅛ .02⅜
38-40 Straw distillate	.03¼ .03½	.03⅛ .03½	.03¼ .03½
KANSAS—			
24-26 Fuel Oil	.85 .90	.85 .90	.85 .90
32-36 Gas Oil	.02½ .02¾	.02½ .02¾	.02½ .02¾
38-40 Distillate	.03½ .03¾	.03½ .03¾	.03½ .03¾
OKLAHOMA (Group 3)—			
24-26 Fuel Oil (buyers' cars)	.65 .70	.65 .70	.65 .70
24-26 Fuel Oil (sellers' cars)	.70 .75	.70 .75	.70 .75
28-30 Fuel Oil (sellers' cars)	.80 .85	.80 .85	.80 .85
32-36 Gas Oil	.02¼ .02½	.02¼ .02½	.02¼ .02½
38-40 Straw Distillate	.03 .03¼	.03 .03¼	.03 .03¼
NORTH TEXAS—			
24-26 Fuel Oil	.60 .65	.60 .65	.60 .65
26-30 Fuel Oil	.65 .70	.65 .70	.65 .70
32-36 Gas Oil	.02¼ .02¾	.02¼ .02¾	.02½ .02¾
36-38 Gas Oil	.02½ .02⅝	.02½ .02⅝	.02½ .02⅝
38-40 Straw Distillate	.02⅞ .03⅛	.02⅞ .03⅛	.02⅞ .03⅛
NORTH LOUISIANA—			
20-22 Fuel Oil	.65 .70	.65 .70	.65 .70
32-36 Gas Oil	.02½ .02¾	.02½ .02¾	.02¾ .03
38-40 light straw distillate	.03	.03	.03
ARKANSAS—			
38-40 Distillate	.03	.03 .03¼	
32-36 Gas Oil	.02¾	.02½ .02¾	
22-26 Refinery Fuel Oil	.60 .70	.60 .70	
GULF COAST (South Texas)—			
Gas oil	.02¾ .03¼	.02¾ .03¼	.03 .03½
Fuel oil	1.10 1.15	1.10 1.15	1.10 1.15
PENNSYLVANIA—			
30-34 Fuel Oil	.05¼	.05¼	.05¼
36-40 Fuel Oil	.05½	.05½	.05½
34 Neutral	.08	.08	.08

NEUTRAL OILS

OKLAHOMA (Group 3)—	Nov. 27	Nov. 20	Nov. 13
Pale Neutrals:			
70-80 vis., 2½ color, 20-25 cold test	.04 .04¼	.04 .04¼	.04 .04¼
100 vis., 2 color, 20-25 cold test	.05 .05½	.05 .05½	.05 .05½
100 vis., 3 color, 20-25 cold test	.04¾ .05	.04¾ .05	.04¾ .05
150 vis., 3 color, 20-25 cold test	.09½ .10	.09½ .10	.09½ .10
150 vis., 4 color, 20-25 cold test	.09 .09½	.09 .09½	.09 .09½
180 vis., 4 color, 23-28 cold test	.11¼ .11¾	.11¼ .11¾	.11¼ .11¾
180 vis., 3 color, 23-28 cold test	.12 .12½	.12 .12½	.12 .12½
200 vis., 3 color, 23-28 cold test	.13 .13½	.13 .13½	.13 .13½
200 vis., 4 color, 23-28 cold test	.12¼ .12¾	.12¼ .12¾	.12¼ .12¾
200 vis., 3 color, 25-30 cold test	.14 .14½	.14 .14½	.14 .14½
220 vis., 4 color, 25-30 cold test	.13¼ .13¾	.13¼ .13¾	.13¼ .13¾
240 vis., 3 color, 25-30 cold test	.15 .15½	.15 .15½	.15 .15½
240 vis., 4 color, 25-30 cold test	.14¼ .14¾	.14¼ .14¾	.14¼ .14¾
280 vis., 3 color, 25-30 cold test	.17½ .18	.17½ .18	.17½ .18
280 vis., 4 color, 25-30 cold test	.16½ .17	.16½ .17	.16½ .17
300 vis., 3 color, 25-30 cold test	.18 .18½	.18 .18½	.18 .18½
Red Neutrals:			
180 vis., 5 color, 23-28 cold test	.10½ .11	.10½ .11	.10½ .11
180 vis., 6 color, 23-28 cold test	.09¾ .10¼	.09¾ .10¼	.09¾ .10¼
200 vis., 5 color, 23-28 cold test	.11½ .12	.11½ .12	.11½ .12
200 vis., 6 color, 23-28 cold test	.10¾ .11¼	.10¾ .11¼	.10¾ .11¼
220 vis., 5 color, 25-30 cold test	.12½ .13	.12½ .13	.12½ .13
220 vis., 6 color, 25-30 cold test	.11¾ .12½	.11¾ .12½	.11¾ .12½
240 vis., 5 color, 25-30 cold test	.13½ .14	.13½ .14	.13½ .14
240 vis., 6 color, 25-30 cold test	.12¾ .13¼	.12¾ .13¼	.12¾ .13¼
280 vis., 5 color, 25-30 cold test	.15½ .16	.15½ .16	.15½ .16
280 vis., 6 color, 25-30 cold test	.14½ .15	.14½ .15	.14½ .15
300 vis., 5 color, 25-30 cold test	.14½ .15	.14½ .15	.14½ .15
150-160 vis., 1 color, 40-50 cold test	.04½ .05	.04½ .05	.04½ .05
190-200 dark green, 40-50 cold test	.03½ .04	.03½ .04	.03½ .04
600 steam refined	.16	.16	.16
590-600 Bright Stock	.23 .26	.23 .26	.23 .26
600-610 Bright Stock	.28 .31	.28 .31	.28 .31
Waxes:			
124-126 White Crude Scale Wax	.02¾ .03	.02¾ .03	.02¾ .02⅞



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

PENNSYLVANIA—	Nov. 27	Nov. 20	Nov. 13
150, 3 color	.21	.21	.21
180, 3 color	.23½	.23½	.23½
200, 3 color	.25	.25	.25
220, 3 color	.28	.28	.28
600, steam refined	.11½	.11½	.11
635, steam refined	.14	.14	.13
650, steam refined	.15	.15	.14½
600, Pennsylvania flash	.17	.17	.16½
630, Pennsylvania flash	.21	.21	.20½
*550, E filtered	.14	.14	.14
*600, E filtered	.16¼	.16¼	.16¼
600, E filtered	.15	.15	.15
600, D filtered	.21	.21	.21
550, E filtered	.13½	.13½	.13½
550, D filtered	.16	.16	.16
Pennsylvania Bright Stock	.31½	.31½	.31½
†122-124 White Crude Scale Wax	.03¼	.03¼	.03¼
†124-126 White Crude Scale Wax	.03⅜	.03⅜	.03⅜
300 Mineral Seal	.07¾	.07¾	.07¾

*At Warren, Penn. †At New York City.

GULF COAST (South Texas)—	Nov. 27		Nov. 20		Nov. 13	
Lubricating Stocks:						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.09	.10	.09	.10	.08½	.09½
No. 2½ color, 150 vis., pale oil	.10	.11	.10	.11	.10	.11
No. 3 color, 200 vis., pale oil	.11	.12½	.11	.12½	.11	.12
No. 3½ color, 300 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 3½ color, 500 vis., pale oil	.16	.17	.16	.17	.15	.16
No. 3½ color, 750 vis., pale oil	.21	.23	.21	.23	.21	.23
No. 1½ color, 150 vis., pale, filtered	.21	.22½	.21	.22½	.21	.22½
No. 2 color, 200 vis., pale, filtered	.24	.25	.24	.25	.24	.25
No. 3½ color, 500 vis., pale, filtered	.32	.33	.32	.33	.32	.33
No. 3½ color, 750 vis., pale, filtered	.38	.40	.38	.40	.38	.40
No. 5 color, 200 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 color, 300 vis., red oil	.13½	.14½	.11½	.12½	.11½	.12½
No. 5 color, 500 vis., red oil	.20	.21	.13½	.14½	.13	.14
No. 5 color, 750 vis., red oil	.02¾	.03¼	.20	.21	.20	.21

NEW YORK DOMESTIC MARKET

Motor Gasoline:	Nov. 27	Nov. 20	Nov. 13
Greater New York, in steel barrels	.15½	.15½	.15½
New York State (outside Greater New York and New England, tank wagon	.15½	.15½	.15½
New Jersey, tank wagon	.15½	.15½	.15½
V.M.P. Naphtha, in steel barrels	.14½	.14½	.14½
Kerosene:			
Greater New York, tank wagon	.15	.15	.15
New York State (outside Greater New York and New England, tank wagon	.15	.15	.15
Gasoline in bulk, delivered at N. Y.	.09½	.09½	.09½
New Jersey, tank wagon	.14	.14	.14
Lubricating Oil (Industrial) at refinery, Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.36½	.36½	.36½
Cylinder, light filtered, in barrels	.31½	.31½	.31½
Cylinder, Bright Stock	.44	.44	.44
Cylinder, steam refined (600)	.21½	.21½	.21½
Black, in bulk	.09½	.09½	.09½
Bloomless, white, 30-31 gravity, 170 vis.	.43	.43	.43
Bloomless, 885 specific gravity	.10½	.16½	.16½
Red Paraffin:			
170 viscosity	.18½	.18½	.18½
212 viscosity	.20	.20	.20
265 viscosity	.22	.22	.22
295 viscosity	.25	.25	.25
Paraffin, 903 specific gravity	.22½	.22½	.22½
*Fuel Oil:			
Bunker Oil, 14 plus, delivered in barges, bbl.	1.35	1.45	1.45
Diesel Oil, at refinery, gallon	.03½	.03¾	.03¾
Furnace oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.04	.04¼	.04¼
Wax, fully refined:			
120-122 a.m.p.	.03⅜	.03⅜	.03⅜
125-127 a.m.p.	.03¾	03¾	.03¾
130-132 a.m.p.	.04¼	.04¼	.04¼
135-137 a.m.p.	.05¼	05¼	.05¼

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Nov. 27	Nov. 20	Nov. 13
Motor Gasoline, in cases, gallon	.24.15	.24.15	.24.15
Motor Gasoline, U. S. Navy, spec., gallon	.10.5	.10.50	.10.50
Naphtha, 60° F., 59-61 spec. grav	.12.0	.12.00	.12.00
Naphtha, 60° F., 63-66 spec. grav	.14.0	.14.00	.14.00
Naphtha, 60° F., 66-68 spec. grav	.15.5	.15.50	.15.50
Kerosene:			
Standard White, in bulk, gallon	.07	.07	.07
Standard white, in barrels, gallon	.14	.14	.14
Standard white, in cases, gallon	.16.9	.16.9	.16.9
Water white, in bulk, gallon	.08	.08	.08
Water white, in barrels, gallon	.15	.15	.15
Water white, in cases, gallon	.17.9	.17.9	.17.9

CRUDE OIL PRICES

November 13.—Joseph Seep Purchasing Agency reduced all grades of Pennsylvania crudes 15 cents. Cabell crude was reduced 15 cents and Somerset light and medium crudes 10 cents.

November 14.—Joseph Seep Purchasing Agency reduced Corning crude 20 cents.

November 15.—Standard Oil Co. of Louisiana reduced Caddo, Homer, Haynesville, El Dorado, Bull Bayou and De Soto crudes from 10 to 25 cents with the exception of Caddo below 32° and Homer below 31°, which were unchanged.

November 16.—The Texas Co. announced that it would purchase all oil in storage and would absorb all storage charges provided the sale was made within 10 days.

November 19.—Magnolia Petroleum Co. advanced Corsicana light (Powell) crude 25 cents. The same company on October 30 reduced this crude 25 cents. Change at that time was not met by all major purchasing companies and resulted in the return to the posted price of $1.

November 20.—Lance Creek and Osage crudes advanced 10 cents.

November 16.—Atlantic Oil and Producing Co. posted new prices for Stephens County, Arkansas crude. The company has two grades replacing four schedules.

Oklahoma and Kansas

Below 33°	$ .75
33° to 39.9°	1.00
40° and above	1.25
Magnolia Petroleum Co.:	
Below 28°	.40
28° to 30.9°	.60
31° to 32.9°	.75

Arkansas and North Louisiana

Caddo, 38° and above	$1.10
35° to 37.9°	1.00
32° to 34.9°	.90
Below 32°	.75
Homer, 35° and above	1.10
33° to 34.9°	1.00
31° to 32.9°	.90
Below 31°	.75
Haynesville, 33° and above	1.00
Below 33°	.90
El Dorado, 33° and above	1.10
Below 33°	1.00
Bull Bayou, 38° and above	1.05
35° to 37.9°	.90
32° to 34.9°	.75
De Soto	1.10
Crichton	.90
Bellevue	.75
Smackover, 26° and above	.75
25° to 25.9°	.60
24° to 24.9°	.50
Below 24°	.40
*Stephens, Ark., 28° and above	.80
26° to 27.9°	.75

*Posted by Atlantic Oil Prod. Co.

Wyoming and Montana

Rock Creek (Wyo.)	$ .60
Salt Creek	.60
Big Muddy	.45
Mule Creek	.45
Grass Creek	.95
Elk Basin	.95
Lance Creek	.90
Osage	.90
Cat Creek (Mont.)	.95
Sunburst (Mont.)	.70
Greybull and Torchlight	.95
Hamilton Dome	.52½

Lander and Lost Soldier based on contracts covering entire production of fields.

North Texas and North Central Texas

Corsicana light	$1.00
Corsicana heavy	.40
Mexia	1.00
Currie	1.00
Powell	1.00
Thrall	1.00

Moran, Burkburnett, Electra, Archer County, Stephens County, Strawn, Ranger, Desdemona, Pioneer and Young County.

Below 33°	$ .75
33° to 39.9°	1.00
40° and above	1.25
Humble Oil and Refining Co.:	
Below 30°	.80
32° to 32.9°	.90
33° to 35.9°	1.00
36° to 38.8°	1.15
39° and above	1.30
Magnolia Petroleum Co.:	
Below 28°	.40
28° to 30.9°	.60
31° to 32.9°	.75
33° to 39.9°	1.00
40° and above	1.25

Gulf Coast

Gulf Pipe Line Co., Goose Creek, Hull, Sour Lake, Batson, Saratoga, Spindletop, Orange, Vinton, Edgerly, Jennings	$1.00
Grade "B," Pierce Junction, Blue Ridge	.90
The Sun Pipe Line Co., Grade "A," Humble, Hull, Goose Creek, Orange, Spindletop, Saratoga, Batson, Dayton, Sour Lake	1.00
Humble Pipe Line Co., Goose Creek, Hull, West Columbia, Orange	1.00
Grade "B," Pierce Junction	.90
Texas Pipe Line Co., Humble, West Columbia, Orange, Sour Lake, Saratoga, Batson, Vinton, Jennings, Markham	1.00
Sinclair Pipe Line Co., West Columbia, Damon Mound	1.00

California

14° to 19.9°	$ .60
20° to 20.9°	.61
21° to 21.9°	.62
22° to 22.9°	.63
23° to 23.9°	.64
24° to 24.9°	.65
25° to 25.9°	.66
26° to 26.9°	.67
27° to 27.9°	.68
28° to 28.9°	.69
29° to 29.9°	.70
30° to 30.9°	.71
31° to 31.9°	.72
32° to 32.9°	.73
33° to 33.9°	.74
34° to 34.9°	.75
35° gravity and above	.76

Eastern States

Penna Grade Oil in New York Transit Lines	$2.60
Bradford District Oil in National Transit Lines	2.60
Penna Grade Oil in National Transit Lines	2.35
Penna Grade Oil in South West Pa. Pipe Lines	2.35
Penna Grade Oil in Eureka Pipe Line Lines	2.35
Penna Grade Oil in Buckeye Pipe Line Lines	2.35
Corning Grade Oil in Buckeye Pipe Line Lines	1.25
Cabell Grade Oil in Eureka Pipe Line Lines	1.20
*Somerset Medium Oil in Cumberland Pipe Line Lines	1.15
*Somerset Light Oil in Cumberland Pipe Line Lines	1.25
Ragland Grade Oil in Cumberland Pipe Line Lines	.75
Lima	1.43
Wooster	1.25
Illinois	1.22
Indiana	1.23
Princeton	1.22
Plymouth	.60
Waterloo	.70
†Petrolia, Canada	2.03
†Oil Springs, Canada	2.10

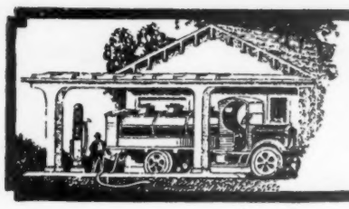
*Somerset oil commands 6 cents over the above posted price.

†Plus Government bounty of 52½c.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$ .80
†Panuco (f.o.b. Mexican ports)	.50
Tuxpam (New York)	1.34
Panuco (New York)	.92

*Plus 29.3c tax. †Plus 16.50c tax. Prices based on contracts.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, Nov. 27

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
Chicago district	12.0	..	14.0	10.0

Tank wagon prices on April 10, 1922, g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 31, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14 g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c.

Decatur, Ill.	12.2	..	14.2	10.5
East St. Louis	11.1	..	13.35	9.6
Joliet	12.4	..	14.4	10.7
Peoria	12.2	..	14.2	10.5
Quincy	12.2	..	14.2	10.3
Davenport, Ia.	12.5	..	14 5	10.9
Des Moines	12.5	..	14.5	10.9
Keokuk	12.5	..	14.5	10.9
Sioux City	12 1	..	14.1	10.5
Duluth, Minn.	13.2	..	15.2	11.6
Minneapolis	12.9	..	14.9	11.6
La Crosse, Wis.	13 2	..	15.2	11.4
Milwaukee	12.0	..	14.0	10.2
Madison	12.3	..	14.3	10.5
Detroit, Mich.	10.8	..	12 8	11.2
Grand Rapids	12 7	..	14.7	11.1
Saginaw	12.9	..	14.9	11.3
Evansville, Ind.	14 0	2.0	16.0	10.5
Fort Wayne	14.4	2.0	16.4	10.9
Indianapolis	14.2	2 0	16.2	10.7
South Bend	14.4	2.0	16.4	10.9
Fargo, N. D.	15.9	1.0	17.9	13 6
Huron, S. D.	16.0	2.0	18.0	12.1
Sioux Falls	15.5	2.0	17.5	11.6
*Kansas City	11.9	1.0	13.9	9 3
Springfield	11.8	..	13.8	10.2
*St. Louis	11.6	.5	13.9	10.0
*St. Joseph	12.3	.5	14.3	10.2
Wichita, Kans.	11.8	..	13 8	9.8

*City tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
*Fittsburgh, Pa.	15.0	..	20.0	14.0
*Philadelphia	15.0	..	20.0	14.0
*Scranton	15.0	..	20.0	14.0
*Allentown	14.0	..	19.0	14.0
*Altoona	15.0	..	20.0	14.0
Dover, Del.	16.0	1.0	19.0	14.0
Wilmington	16.0	1.0	19.0	14.0
Providence, R. I	15.5	..	18.0	14.0
Springfield, Mass	14.5	..	17.0	14.0
Worcester	14.5	..	17.0	14.0
Boston	14.5	..	17.0	14.0
Hartford, Conn.	16.5	1.0	19.0	14.0
New Haven	16.5	1.0	19.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
Atlanta, Ga.	16.0	3.0	18.0	14.0
Augusta	18.0	3.0	20.0	15.0
Macon	18.0	3.0	20.0	15.5
Savannah	16.0	3.0	18.0	14.0
Birmingham, Ala.	16.0	2.0	18.0	15.5
Mobile	16.0	2.0	17.0	13.5
Montgomery	16.0	2.0	18.0	16.0
Clarksdale, Miss	14.0	1.0	16.0	14.0
Jackson	14.0	1.0	16.0	12.0
Natchez	13.5	1.0	15.5	13.5
Vicksburg	13.5	1.0	15.5	13.5
Jacksonville, Fla	16.0	3.0	18.0	14.0
Miami	18.0	3.0	20.0	15.5
Pensacola	16.0	3.0	18.0	14.5
Tampa	16.0	3.0	18.0	14.0
Covington, Ky.	16.0	1.0	18.0	13.0
Lexington	15.0	1.0	17.0	14.0
Louisville	14.0	1.0	16.0	13.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
Denver, Colo.	13.0	2.0	15.0	12.5
Glenwood Spgs.	20.0	2.0	....	16.5
Pueblo	16.0	2.0	18.0	12.5
Basin, Wyo.	16.0	1.0	....	13.0
Casper	14.0	1.0	16.0	11.0
Cheyenne	15.5	1.0	17.5	13.0
Cody	17.0	1.0	....	14.0
Lander	16.0	1.0	....	13.0
Billings, Mont.	18.5	2.0	20.5	14.5
Butte	20.0	2.0	22.0	15.0
Great Falls	20.0	2.0	22.0	16.0
Helena	20.0	2.0	22.0	16.0
Miles City	19.5	2.0	21.5	15.5
Boise, Idaho	20.0	3.0	22.0	18.0
Salt Lake, Utah	18.0	2.5	20.0	15.5
Ogden	19.0	2.5	21.0	15.5
Albuquerque, N. M.	18.0	1.0	20.0	15.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
Newark, N. J.	15.5	..	....	14.0
Atlantic City	15.5	..	....	14.0
Annapolis, Md.	16.0	1.0	19.0	14.0
Baltimore	16.0	1.0	19.0	13.0
Cumberland	16.0	1.0	19.0	15.0
Washington, D. C.	15.0	..	18.0	13.5
Norfolk, Va.	18.0	3.0	20.0	13.0
Petersburg	18.0	3.0	20.0	14.5
Danville	18.0	3.0	20.0	15.5
Richmond	18.0	3.0	20.0	13.5
Roanoke	18.0	3.0	20.0	15.0
Keyser, W. Va.	17.0	2.0	....	15.0
Charleston	17.0	2.0	....	13.5
Parkersburg	17.0	2.0	....	12.0
Wheeling	17.0	2.0	....	13.5
Charlotte, N. C.	18.0	3.0	....	14.5
Hickory	18.0	3.0	....	15.0
Mt. Airy	18.0	3.0	....	14.5
Salisbury	18.0	3.0	....	15.0
Charleston, S. C.	18.0	3.0	....	12.5
Columbia, S. C.	18.0	3.0	20.0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
Dallas, Tex.	7.0	1.0	10.0	8.0
Fort Worth	7.0	1.0	9.0	10.0
Houston	14.0	1.0	18.0	11.0
San Antonio	7.0	1.0	10.0	9.0
El Paso	12.0	1.0	15.0	12.0
Muskogee, Okla.	9.0	1.0	12.0	9.0
Oklahoma City.	9.0	1.0	12.0	9.0
Tulsa	9.0	1.0	12.0	9.0
Ft. Smith, Ark.	13.0	1.0	16.0	12.0
Little Rock	15.0	3.0	18.0	13.0
Texarkana	15.0	3.0	18.0	12.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
New Orleans, La	12.5	1.0	14.5	12.0
Alexandria	13.5	1.0	15.5	13.0
Baton Rouge	12.0	1.0	14.0	11.5
Lake Charles	13.5	1.0	15.5	13.0
Shreveport	13.5	1.0	15.5	13.0
Memphis, Tenn.	15.5	2.0	17.0	14.0
Chattanooga	15.5	2.0	17.5	14.5
Knoxville	16.5	2.0	18.5	15.0
Nashville	15.5	2.0	17.5	14.0
Bristol	17.0	2.0	19.0	15.5
Little Rock, Ark	16.5	3.0	18.5	13.0
West Helena	16.5	3.0	18.5	13.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
Albany, N. Y.	15.5	..	18.5	15.0
*New York	15.5	..	18.0	15.0
Buffalo	14.5	..	17.5	15.0
Rochester	14.5	..	17.0	14.0
Syracuse	14.0	..	16.0	12.0
Boston, Mass.	14.5	..	17.0	15.0
Providence, R.I.	15.5	..	19.0	15.0
Augusta, Me.	15.5	1.0	19.0	15.0
Manchester	15.5	1.0	19.0	15.0
Burlington, Vt.	15.5	1.0	19.0	15.0

*Price in steel barrels.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
All Ohio points.	16.0	..	18.0	13.0

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
San Francisco	13.0	2.0	16.0	15.5
Los Angeles	12.0	2.0	15.0	15.5
Fresno	13.5	2.0	16.5	17.5
Reno, Nev.	16.5	2.0	19.5	19.0
Portland, Ore.	15.0	3.0	18.0	16.5
Seattle, Wash.	13.0	1.0	16.0	16.5
Tacoma	13.0	1.0	16.0	16.5
Spokane	17.0	1.0	20.0	16.5
Phoenix, Ariz.	19.0	3.0	22.0	21.5
Honolulu, H.	13.5	..	16.5	17.5
Juneau, Alaska	14.5	..	17.5	18.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Incldg tax of	Service station	Kero. Tank wagon
Omaha	12.25	..	14.25	10.5
Crawford	13.0	..	....	11.25
McCook	13.75	..	16.75	13.0
Norfolk	12.75	..	14.75	11.00
North Platte	13.75	..	15.75	11.75
Scotts Bluff	13.25	..	15.25	11.25

TANK WAGON CHANGES

Effective November 17, the Continental Oil Co. reduced the gasoline tank wagon and service station price 1 cent at Salt Lake City, Utah.

Effective November 20, the Atlantic Refining Co. reduced the gasoline tank wagon and service station price 1 cent in the entire territory. This change was carried in last week's issue as being confined to Pennsylvania and Delaware.

Effective November 19, the Magnolia Petroleum Co. reduced the gasoline tank wagon and service station prices 2 cents at Oklahoma City.

Effective November 20, the Magnolia Petroleum Co. reduced the gasoline tank wagon and service station prices 2 cents at Fort Smith, Ark.

Effective November 21, the Magnolia Petroleum Co. reduced the gasoline tank wagon and service station prices 3 cents at Muskogee and 2 cents at Tulsa, Okla

PROSPERITY ASSURED FOR OIL INDUSTRY

(Continued from Page 25)

ignorant of the business and who can do incalculable harm unless the public be educated as to the real facts. The public is fair and can be depended upon to retire to private life any politicians who attempt to put anything over on them, but the public must know these politicians are misleading them. That is a most important function of the oil industry at this time.

One Word of Caution

There are many fields throughout the country where development work has been curtailed greatly since the overproduction of crude became such a menace to the industry. The Burbank Field in Oklahoma is a notable example. Production there could be increased materially within a short time if it became necessary to obtain the crude. Oil men everywhere should realize this fact. A premature boom would do as great harm now as the bringing in of a new producing area. A steady resumption of operations as production declines and consumption increases is the most logical plan for all oil men. Such a procedure will mean prosperity for every branch of the industry and the industry as a whole cannot be prosperous unless every unit in it is prosperous.

Frank Phillips, president of the Phillips Petroleum Co., summed up the present situation this week when he said: "Generally speaking, there is no justification for lower prices and the industry as a whole is now on a below-cost basis Unfortunately, the public does not appreciate that it is today consuming a necessary product at less than cost and only in exceptional instances is any money being made in the industry. A record number of major pools were developed and reached their peaks during the year and the majority of present production is coming from flush pools. Without exception, this flush production is declining while annual consumption is constantly increasing.

"Barring the unexpected in the way of large, new production, demand should exceed supply by early spring and a heavy drain on stocks with consequent strengthening of prices is predicted for 1924. If producers and operators will only exercise reasonable judgment and discontinue unnecessary drilling and refiners and marketers refrain from further price cuts and local price wars which are entirely uncalled for, normalcy will be restored in a remarkably short time."

DISPOSING OF PARCELS OF BIG MULLEN ESTATE

ARDMORE, Okla., Nov. 23.—Nearly 150 bidders were present at the bankrupt sale of the interests owned and controlled by the J. S. Mullen estate this morning.

The total amount of the bids made for the various holdings offered was $236,643.56, and included the following properties:

Ten acres fee located in Section 34-4s-2w, to Hugh Sturm at $85 per acre, or a total of $850. Last May $5 per acre was bid.

One hundred and fifty acres fee in Section 7-3s-2w, 2 miles south of Graham, to Westheimer-Daube, at $57.50 per acre, or a total of $8,625. Last May it brought $7,000.

Seventy acres in fee in Section 16-3s-2w, to Westheimer & Daube at $50 per acre, or a total of $3,500.

Producing Property

Mullen interest in the Rexroat lease in Section 10-4s-2w, to W. M. Bonner of Oklahoma City for $55,000. The interest is an approximate one-fourth in a tract of 110 acres which is producing about 400 barrels daily. Last May it was bid at $40,000. It is operated by the Cottonbelt Petroleum Co.

Mullen royalty in a 36-acre tract in Section 36-4s-2w, to the secured creditors for $125,000. It consists of a one-eighth interest in total daily production of 720 barrels, or 90 barrels daily. The lease is operated by the Carter Oil Co. Last May the royalty was bid at $110,000.

Two hundred and twenty-acre farm in Sections 15 and 22-3s-1e, to Hugh Sturm at $15 per acre or a total of $3,300.

Waggoner tract, 1,537 acres, in Waggoner County, to Max Westheimer, Dave Daube, Sam Daube, E. G. Johnson and J. Alfred Johnson, for $40,368.56.

RECEIPTS AND IMPORTS CALIFORNIA PETROLEUM

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended November 17 totaled 1,227,000 bbls., a daily average of 175,286 bbls., against 1,380,000 bbls., a daily average of 197,142 bbls. for the week ended November 10, as follows:

At Atlantic Coast Ports—	
Baltimore	275,000
Boston	155,000
New York	457,000
Philadelphia	75,000
Total	962,000
Daily average	137,429
At Gulf Coast Ports—	
New Orleans and Baton Rouge	265,000
Daily average	37,857
Total Atlantic and Gulf Coast Ports	1,227,000
Daily average	175,286

Imports of Petroleum

Imports of crude and refined oils at the principal ports for the week ended November 17 totaled 1,627,000 bbls., a daily average of 232,429 bbls., compared with 1,900,000 bbls., a daily average of 271,429 bbls., for the week ended November 10.

At Atlantic Coast Ports—	
Boston	195,000
New York	66,000
Philadelphia	65,000
Others	244,000
Total	570,000
Daily average	81,429
At Gulf Coast Ports—	
Galveston district	644,000
New Orleans and Baton Rouge	228,000
Port Arthur and Sabine district	185,000
Total	1,057,000
Daily average	151,000
At All U. S. Ports—	
Total	1,627,000
Daily average	232,429

HELPFUL

The Oil and Gas Journal Classified Wants Section is the premier of all oil publication classified sections.

It has been elevated to its high position of respect by the men of the industry because of its reliable and helpful service to them.

This reliable service is at your command. It will help you.

We do not own a share of stock in any refinery and we are therefore not in competition with our own licensees

The licensing of the Dubbs Cracking Process is our sole business The success of the Process we consider our sacred obligation, and its continued development is our duty, our privilege and our pleasure

More than 90 Dubbs Cracking Units are now in operation and under construction

Universal Oil Products Company
Owners of the Dubbs Process
208 South La Salle Street Chicago

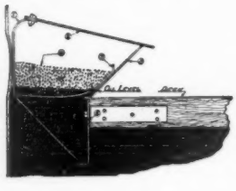
This Cannot Happen To Tanks

Photograph at the left shows a 55,000 barrel tank, owned by the Southern Pacific R. R. Co., after a fire had burned a third of its contents and melted down two rings of the wall before extinguishers took effect.

Photograph at the right shows the same tank re-conditioned and equipped with a Safvety Floating Tank Deck, never again to burn or lose its contents by evaporation.

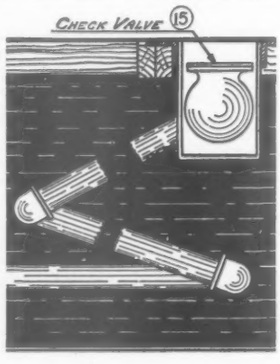
Gravity Seal—No Springs—Permanent

THE main structure of the *Safvety* Floating Deck is slightly smaller than the diameter of the tank. The rim of this extends above and below the deck. The space between deck and tank wall is connected with a flexible steel basket, (see illustration). Gravel in the bottom of the basket (3) by gravity keeps member No. 1 crowded out against the tank wall at all times. No. 1 is hook hinged to No. 6 and No. 3 is hook hinged to No. 1. No. 3 slides in and out on No. 5 which is higher than displacement. No. 2 sheds water onto the main structure. *This flexible basket is fully covered by patents and is the original floating deck invention.* The momentum for its automatic operation is furnished by nature's gravity pull. *It is not dependent on springs for operation and it is made of steel with a life as long as that of the tank.* It represents the difference between success and failure in a floating deck.



Automatic Folding Drain Pipe

THE illustration at the right shows the Automatic Drain Pipe through which rain or snow falling on the area of the *Safvety* Floating Deck is carried off. This pipe is swivel jointed and folds or extends with the raising and lowering of the deck. A check valve is located on the inside of the drain well and on the intake end of the drain pipe. This is a safety feature to prevent oil from flooding the deck in the event of a break in the drain pipe. The opposite end of the drain pipe has an automatic check valve which closes this end in the event of a break. *This patented drainage system is of prime importance to Floating Deck success.*



The Kansas City Refining Company

OFFICE AND REFINERY
Kansas City, Kansas

September 21, 1923.

Mr. A. A. Kramer, Pres.,
Columbian Steel Tank Company,
Kansas City, Missouri.

Dear Mr. Kramer:

We had the 25,000-barrel tank, which you equipped with floating deck, filled with gasoline for 102 days between May 25th and September 4th. During this time a very careful check was made with due allowance for temperature difference to ascertain the exact evaporation loss.

The tank contained 25,000 barrels of Navy Gasoline at the time the test started. No gasoline was pumped into or from the tank during the test, and the evaporation loss amounted to .98 of one percent.

We regard this as an excellent showing, as the test covered the entire hot summer season, which, this year, was accompanied with a good many brisk summer breezes.

You are at liberty to use this letter in any way you wish.

Yours very truly,
THE KANSAS CITY REFINING COMPANY
BY ..... Manager.

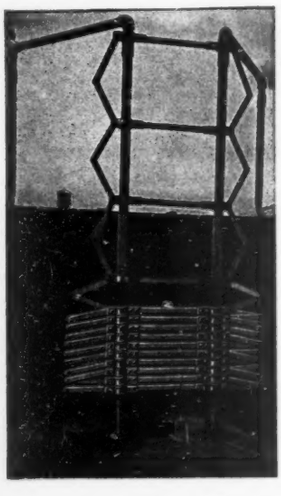
ENG:L

Prevents Evaporation

WITH a 25,000 barrel tank, equipped with a Safvety Floating Tank Deck, and filled with Navy Gasoline, the Kansas City Refining Company, Kansas City, Kansas, conducted an evaporation test over a period of 102 days of hot summer heat.

Above is reproduced in fac simile a letter from Mr. E. W. Goebel, Manager, in which he describes the conditions of the test and the results. Just read what he says.

The evaporation loss was less than 1 per cent. The same size tanks equipped with canopy decks and in much more favorable weather showed an evaporation loss of 5 per cent and better. The difference between these two losses, reduced to gallons and figured 10 cents per gallon, amounts to nearly $5,000.00. Almost enough saved in a little over 3 months to pay for the floating deck. Repeated four times a year rather handsome dividends accrue—dividends that are escaping into the air from thousands of other tanks.



Automatic Folding Ladder

SINCE the *Safvety* Floating Deck raises and lowers with the level of the oil in the tank a ladder is necessary for easy access. The Automatic Folding Ladder shown at the left is standard equipment. This unique, *patented ladder* folds and unfolds its steps with the raising and lowering of the deck. The telescoping steps slide on two pipes anchored at the top and bottom of the tank and passing through sleeves in the deck.

Not An Experiment

Years have been spent in the development and perfecting of the Safvety Floating Tank Deck. It is not an experiment. Scores of installations have proved its success. Every detail has been worked out to a nicety.

Equipped With The

Safvety Floating Tank Deck

PREVENTS OIL TANK FIRES *and* EVAPORATION

IT floats on the surface of the oil. No air space is left between deck and oil in which vapor can form. Crude and its fractions are not combustible until vaporized. That is why a tank of oil under a Safvety Floating Tank Deck cannot be ignited. That is why the Safvety Floating Tank Deck prevents evaporation. The principle is as simple as A B C. The problem was to perfect a deck adaptable to all tanks.

Fits All Tanks

The Safvety Floating Tank Deck fits all tanks—those with packed bolted seams, those with riveted and calked seams, those with welded seams, those with bulging walls and those with walls out of plumb. Its outer rim is automatically flexible to clear all irregularities. It adjusts itself to the exact shape of the tank while at all times maintaining a snug seal against the tank wall.

A Permanent Tank Deck

It is a permanent structure of steel—not a liquid seal. It is a self-contained tank deck. One of its patented features provides ample drainage of rain and snow fall. No canopy deck is required. Since it floats on the oil it is not exposed to injurious gases. It has exactly as long a life as the tank.

An Ounce of Prevention Is Better Than Barrels of Extinguisher

Canopy decks and fire extinguishers performing at their conceded best do not prevent damage, loss and waste when fire breaks loose. The same investment in Safvety Floating Tank Decks will not only prevent tank fires but evaporation as well.

Write For Elaborate Catalog Reproducing Results of Actual Tests—

Photographs of installations, letters from users, detailed plans of construction and installation and full description. Before re-decking any of your present tanks, before specifying decks for any new tanks you are buying—investigate the Safvety Floating Tank Deck. Read the letters published in the catalog. See why such well known firms as Magnolia Petroleum, Atlantic Refining, Roxana Petroleum, etc., are making installations. Just fill out the coupon opposite, attach it to your letterhead and mail.

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Boil Gasoline Without Ignition

HERE is reproduced an actual photograph of a tank, equipped with a *Safvety* Floating Deck, enveloped in a raging fire. It contains California crude on top of which was placed 30 gallons of gasoline. The debris around the tank was saturated with gasoline and set afire. Three hours elapsed from the time the torch was applied until the debris was consumed. Three hours of red hot fire—*not just a torch held above the deck.* The boiling of the oil in the tank could be heard for a distance of 50 yards. At no time did the contents of the tank ignite.

Not just this one, but many actual fire tests have demonstrated the merits of the *Safvety* Floating Deck as a preventor of fire and evaporation. During another test at Kansas City, eggs were hard boiled in the oil. A much more severe test was conducted by the Southern Pacific R. R. Co. under the direction of Mr. Harry Pollard, Chief of their Fire Prevention Department with results that persuaded them to install a *Safvety* Deck on the 55,000 barrel tank shown above.

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Columbian Steel Tank Company
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Send catalog reproducing results of actual tests, photographs of installations, letters from users, detailed plans of construction and installation and full description of the *Safvety* Floating Tank Deck.

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Core Drilling in the California Fields

Technique of the Operation, With Types of Drills and Methods of Drilling, Described in Detail by Engineer

By J. E. Elliott
Consulting Engineer and Geologist, Los Angeles, Calif.

The Shell Co. of California first used the core drill in its endeavors to locate subsurface structures west of Santa Fe Springs. Similar work was done near Wasco in the San Joaquin Valley. About the same time the Shell Company was experimenting in the use of the core drill in connection with rotary-drilled holes. The oil sands in its discovery well at Signal Hill were located by means of the rotary core drill.

In 1921, in view of the trouble operators were having in Southern California, particularly at Huntington Beach, R. E. Collom, of State Mining Bureau, called attention to the possibilities of the core drill for eliminating many of the serious problems facing them. Late in 1921 the California operators became converted to the advantages of that method, and in the short space of one year core drilling in rotary-drilled holes has risen from a theory to an established practice.

Types of Core Drills

Two general types of core drills are used in connection with rotary-drilled holes: so-called single- and double-barrel core drills, the former a non-reaming type, while the latter usually reams out the hole to a greater or less degree.

The single-barrel is now used in the South to a considerable extent. It consists of a length of drill pipe from 3 to 8 inches in diameter, and having 4 to 16 teeth cut in one end with a hack-saw or an oxyacetylene flame. This contrivance is rotated slowly to the bottom of the hole, and when it is decided that enough core has been cut, weight is applied to the pipe so as to bend the teeth inward to form a basket, and the pipe is withdrawn from the hole.

The advantages of this type are its small initial cost and its ease of manufacture. Offsetting these advantages are objectionable features: The short average length of extracted core; washing and contamination of the core by the circulating mud flush; unreliability of cores because of obtaining compressed mud, caving, etc.; liability of injury to the core by heat; loss of cores due to failure in closing core barrel, particularly liable to happen in sand formations; danger of pulling "wet" jobs due to plugging of circulation holes in core drill apt to cause serious danger of caving in the walls of the hole; and liability of sticking or "freezing" the core barrel, causing a fishing job.

Another type of core bit that may come under the same category is termed the "punch core;" the Shell Company has used this extensively. It is comparatively inexpensive but it takes a short core and, unless the hole is thoroughly cleaned out before the bit is dropped in the formation, a mass of compressed mud is usually obtained, which to the uninitiated may appear to be a core, and give results that are misleading.

Double-Barrel Drills

There are several types of double-barrel core drills in use, the general features of which are similar, but each varies considerably in details of construction. This type consists of two concentric barrels between which the mud flush passes directly to the bottom of the hole. These two barrels are attached to various types of cutting shoes. The inner barrel, through which the core passes up and is retained, is usually from 1 to 4 inches in diameter: it may be of any desired length and is usually fitted at the top with a valve which permits the escape of the entrapped fluid. This type will ultimately prevail over the single-barrel drills, because of its many advantages.

A properly constructed double-barrel core drill is more expensive to manufacture and operate than the ordinary single-barrel or basket type of core drill, but with proper operation the results obtained by the former more than justify this additional expense. A properly manipulated, properly constructed, double-barrel core drill possesses the following advantages over the single-barrel drill:

1. Great length of core obtained, very important where continuous coring is desired. Recent practice in California, particularly in fields where edge water is threatening, is to core continuously through the oil sands.

2. Cores are obtained from hard and soft formations impossible to obtain with a single core barrel. A properly operated double-barrel core drill will penetrate practically any formation that can be drilled by a fish-tail bit.

3. There is a minimum of contamination of the core by the circulating mud fluid. In one particular instance we took a core with a double-barrel drill immediately after a core had been taken by a single barrel. The core obtained by the basket type showed considerable oil, which was due to contamination from the oil-laden mud fluid. The core obtained with the double-barrel was absolutely uncontaminated.

4. The loss of cores is much less with a properly operated double-barrel core drill than with the basket type. Our misses do not exceed 5 per cent as a whole, and many are due to cause over which we have no control, such as iron in the hole, breaking of drilling equipment, etc.

5. More perfect sections of the formation cored are extracted with the double-barrel than with the basket type, and in many instances reliable dips have been obtained from cores.

6. The proper use of double-barrel core drill eliminates heating and burning of the core. The single-barrel core drill maintains circulation through holes which are at least 4 feet from the cutting edge. When drilling in hard material, particularly a compact sand, the cutting edges become hot—sometimes hot enough to fuse the barrel and the enclosed sand to a slag. In the early days of coring, such cores were believed to indicate the presence of intercalated volcanic flows in the oil measures, but a microscopic examination of thin sections of this material show conclusively their artificial origin. The double-barrel drill eliminates such burning by maintaining circulation right to the cutting edges.

Some operators are experimenting with a double-barrel core drill which reams a hole to the same size as is being drilled by the fish-tail bit, but in our opinion this is a disadvantage. Such a core bit increases the risk of twisting off and, if left in the hole, is very difficult to fish out or sidetrack.

Most operators prefer the type of core drill that will cut a smaller hole than that being drilled by the fish-tail bit. This allows the pilot hole to be cored ahead as much as 50 or 60 feet. This is extremely important in an area not well proven, for it enables the operator to feel his way ahead with absolute certainty; if the oil sand is encountered, he can then ream his hole down to the exact desired depth, and set his casing in such a manner as to insure a perfect shutoff.

Not Popular With Drillers

The average driller does so little coring that he is not efficient in it, and therefore, does not obtain the same results as a well trained, experienced core driller; it requires considerable time to teach a driller to take cores efficiently. We have found that the majority of drillers object to taking core; they realize their inefficiency and feel rather keenly the poor results ordinarily obtained by the average driller. In one or two instances, companies have endeavored to train men especially for core drilling and have obtained correspondingly good results; the main objection to this practice seems to be that the rest of the crews object to having one of their own number kept out purposely for this work.

It may be interesting to enumerate some of the various uses to which the core drill has been put. First is the locating of the top of the oil sands, in order that the water shutoff may be properly placed. In checking over the wells we have cored, we find that 95 per cent have successfully shut off the water, and we feel the core drill has been a direct factor in this large percentage of success.

Sometimes no coring is done until after the water has been set, and the test has shown that water is not shut off. In these cases the core drill is called on to determine the material immediately below the shoe and if this material is shale or oil sand, it is immediately evident the cementing was unsuccessful.

Advantages of Continuous Coring

The Wilshire Oil Co.'s Babbonett well is a good example of the advantage of continuous coring. One location away, the same company had a well producing clean oil from the Bell sand, and it was expected to place the Babbonett well on production in the Bell sand also. Coring was resorted to in order to locate the top of the productive zone, and showed conclusively that the Bell sand had become a water sand. The well was continued to the Myer zone.

The Hamilton No. 4 had a similar experience. At 4,600 feet the well had made no showings and its backers were discouraged. Mr. McKeon proceeded, and by coring found the top of the Myer zone; after coring through 30 feet of this sand he brought the well in with a production of 2,000 barrels per day. Incidentally, this well, which was finished at 4,698 feet, had the distinction of being the deepest well drilled with 6-inch drill pipe.

These are two examples of the discovery of edge water conditions by the core drill, but there have been many more. The significance of such discoveries lies in the fact that they obviate the necessity of landing two strings of casing and testing out, and then of pulling the oil string and proceeding to deepen the hole with a decreased diameter. The latter procedure is now the old fashioned way.

(Continued on Page 107)

MECHANICAL PETROLEUM ENGINEERS NECESSARY TO OIL DEVELOPMENT

By Lee C. Moore
Chairman Mid-Continent Section, American Society of Mechanical Engineers

Not a new industry, that of gathering petroleum, because more than 50 or 60 years have elapsed since a curious man conceived the idea that visible seepages of a greenish-tinted fluid that was found afloat on nearby water courses might have value, and this was near Tidioute, or some other place in Pennsylvania, it matters not exactly where.

Now, the man referred to was properly correct, as later events are convincing, but as to the possible value of this fluid for a time there was an element of grave doubt, and as to just which one of the many voids this material could be used to fill. At the moment, it seemed best adapted as a liniment for rheumatic troubles, and was said to help chilblains, and sold for this purpose. But further consideration was necessary, therefore came the "Chemist," way back in the early days, who almost instantly arranged for the division of the by-products.

And next, but not right away, someone with a match discovered that this fluid under certain conditions would burn,—and then the game was on, and it was called "Coal Oil" for a period. Probably more than 6,000,000,000 bbls. have been burned for various purposes since the advent of the first curious man with the match. It is mentioned as a fact that more than 44,000,000 bbls. were burned by railroads in the United States during the year 1922, mostly under locomotive boilers for the purpose of generating steam.

Comparing the practice of burning oil under boilers for the purpose of generating steam with that of using same for power units in internal combustion engines of a strictly modern type, the estimated actual loss in the former method is approximately 60 per cent.

It is evident The Prospector did not know until a few years since what the title "Geologist" meant, — probably thought this had reference to mystic value, or if so, what not, but he knows more about it now, and, while still in the primary class he has, due to his higher education and that of his assistants, of someone else learned of the word "Standardization." Just found it out; yea, he knew it, the word, all the time, but the manufacturers,—they did not want to consider this long word, or

Lee C. Moore

(Continued on Page 107)

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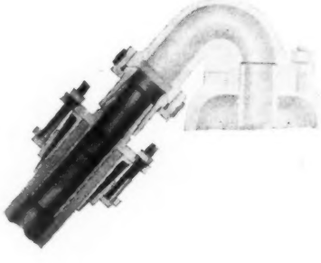

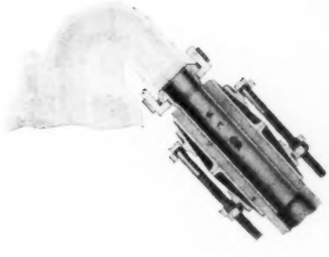

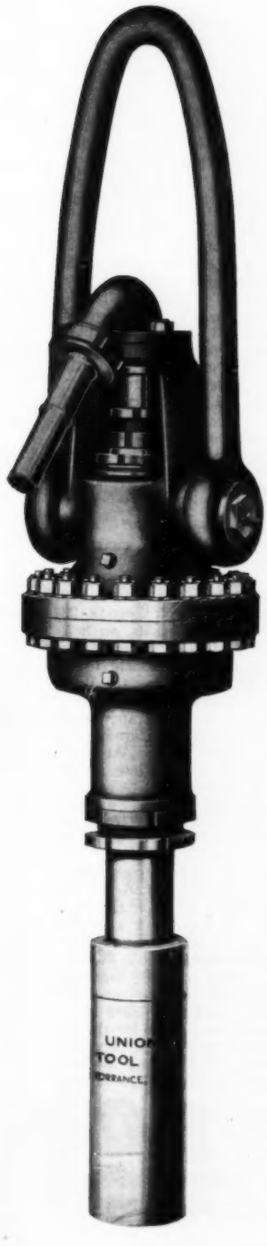

Positive grip hose clamps, made in three slip & six slip styles, stand highest pump pressures and will not cut the hose.

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Oklahoma Field Operations

By C. D. Lockwood

Field reports indicate slump in activities is nearing an end. Resumption of drilling and staking of new locations. Burbank and Wewoka show small declines. Two producers in the Seminole County Field attract interest. Wildcat in Hughes County proves a disappointment to watchers.

Reports from the fields throughout Oklahoma during the past week indicate that the slump in activities which has continued for several months is about at an end. Resumption of drilling in wells previously shut down, as well as the staking of new locations, was a marked tendency on the part of operators, due largely to the lifting of proration on pipe line runs and the evident effort on the part of several large crude purchasers to establish new connections. Although this has created a spirit of optimism throughout the industry, extensive activity at this time is regarded in most conservative quarters as premature.

After staging a slight rally last week, due to the addition of 5 wells, the Burbank Field reported another decline of 2,035 bbls. The figures for the week ending November 21 are 86,444 bbls. from 1,113 wells, compared with 88,479 bbls. from the same number of wells the week before. On Saturday, November 21, the average for the week was 86,136 bbls.

Tonkawa production made a slight gain from Wednesday, November 14 to 21, reporting 47,592 bbls. daily from 591 wells, on the later date, an increase of 318 bbls. a day.

Wewoka Producers

Wewoka maintained her customary position in the interest of producers by reason of two wells. One was the Producers & Refiners Corp.'s No. 6-B. Foster, SE cor. SW NW NW, Section 33-8-8, which came in for 55 bbls. an hour in sand at 3,134-42 feet, bringing the number of producers in that field to 18. The other well of interest was the Dixie Oil Co.'s No. 1 Harris, SE cor. NW NE, Section 32-8-8, which is apparently an edge well, having drilled through the sand found at 3,131-48 feet. At 3,152 feet it had only a small show of oil. It will be drilled deeper.

The Wewoka production on November 21 amounted to 17,972 bbls. from 17 wells, a decrease of 711 bbls. from the figures of the previous week.

The total number of Oklahoma operations showed a decrease of 6 for the week ended November 17. On that date there were 62 locations, 219 rigs, 518 wells drilling and 493 wells shut down, a total of 1,292 operations. For the week previous, there were 66 locations, 224 rigs, 495 wells drilling and 513 wells shut down, a total of 1,298 operations. Comparing the figures for the two weeks, there was a decrease on November 17 of 4 locations, 5 rigs, and 20 wells shut down, and a gain of 23 wells drilling.

A wildcat in Hughes County that has been watched with considerable interest seems to be a disappointment. It was the Turman Oil Co.'s No. 1 Arn, NW cor. Section 13-6-11, which passed through the sand at 3,324 feet, getting only a small show of gas and some water.

Tonkawa Production

The daily average production of the Tonkawa Field by companies for the week ended November 21 was as follows:

Company—	Wells	Bbls.
Amerada Petroleum Corp.	35	2,774
Blackwell Oil & Gas Co.	28	1,873
Carter Oil Co.	6	387
Champlin Refining Co.	3	120
Comar Oil Co.	265	18,769
Cosden Oil & Gas Co. and Marland Refining Co.	14	575
Gypsy Oil Co.	79	7,477
Healdton Oil & Gas Co.	18	2,132
McCaskey & Wentz	41	4,751
McMan Oil Co.	2	35
Pennok Oil Co.	26	1,798
Phillips Pet. Co.	4	573
Prairie Oil & Gas Co.	10	941
Sinclair Oil & Gas Co.	1	17
Slick-Comar Oil Co.	31	3,673
Southwestern Pet. Co.	14	877
The Texas Co.	4	59
White Eagle Oil & Ref. Co.	7	761
Total	591	47,592
Total last week	584	47,274
Difference	7	318

Daily average pipe line runs from the field for the week were as follows: Kay County Gas Co., 25,438 bbls.; Ozark Pipe Line Co., 9,699 bbls.; Gulf Pipe Line Co., 6,442 bbls.; Empire Pipe Line Co., 1,035 bbls.; Champlin Refining Co., 1,653 bbls.; Prairie Pipe Line Co., 941 bbls.; Oklahoma Pipe Line Co., 387 bbls.; Bolene Refining Co., 1,430 bbls.; Golden Rule Refining Co., 503 bbls. Total, 47,528 bbls.

The amount run to lease storage during the week was 74 bbls.

Burbank Production

The daily average production of the Burbank Field, by companies, for the week ended November 21 was as follows:

Company—	Wells	Bbls.
Carter Oil Co.	165	8,448
Comar Oil Co.	7	296
Cosden Oil & Gas Co.	68	1,909
Devonian Oil Co.	16	462
Gardner Pet. Co.	20	907
Gypsy Oil Co.	149	13,007
Kewanee Oil & Gas Co.	12	222
Laurel Oil & Gas Co.	16	522
Lorraine Pet. Co.	15	373
Midland Oil Co.	5	142
Mid-Kansas Oil & Gas Co.	20	3,496
Peters & Oliphant	1	132
Phillips Pet. Co. and Delmar Oil Co.	2	2,742
Phillips Pet. Co.	28	1,986
Phillips Pet. Co. and Skelly Oil Co.	141	8,312
Prairie Oil & Gas Co.	90	2,366
Producers & Refiners Corp.	28	804
Roxana Pet. Corp.	57	973
Simons, Moore and others	29	542
Sinclair Oil & Gas Co.	131	5,558
Skelly Oil Co.	4	1,419
Tidal-Osage Oil Co.	41	1,114
Twin State Oil Co.	8	368
Total	1,053	56,193
Kay County—		
George S. Bole	1	852
Carter Oil Co.	3	2,770
Comar Oil Co.	7	3,202
Cosden Oil & Gas Co.	3	2,851
Gypsy Oil Co.	6	3,232
Laurel Oil & Gas Co.	1	54
Phillips Pet. Co.	9	7,419
Mid-Kansas Oil & Gas Co.	4	2,773
Pure Oil Co.	1	533
Roxana Pet. Corp.	1	691
Dye-Tomlinson and others	5	785
Skelly Oil Co. and Phillips Pet. Co.	12	1,583
Sinclair Oil & Gas Co.	1	148
The Texas Co.	1	1,421
Twin State Oil Co.	5	1,935
Total	60	30,251
Total Burbank	1,113	86,444
Total last week	1,113	88,479
Difference	none	2,035

Daily average pipe line runs were as follows: Gulf Pipe Line Co., 17,456 bbls.; Cosden Pipe Line Co., 8,003 bbls.; Kay County Gas Co., 5,399 bbls.; Osage Pipe Line Co., 1,404 bbls.; Oklahoma Pipe Line Co., 13,296 bbls.; Prairie Pipe Line Co., 5,585 bbls.; Sinclair Pipe Line Co., 6,857 bbls.; Moore Refining Co., 2,189 bbls.; Empire Pipe Line Co., 1,025 bbls.; Magnolia Petroleum Co., 600 bbls.; Ozark Pipe Line Co., 4,268 bbls. Total, 66,082 bbls.

The daily average of oil run to storage during the week was as follows: Standard Pipe Line Co., 14,150 bbls.; Mid-Kansas Oil & Gas Co., 4,398 bbls.; Dye-Thomlinson and others, 485 bbls.; Twin State Oil Co., 727 bbls.; George Bole and others, 602 bbls. Total, 20,362 bbls.

Okmulgee County

In Okmulgee County, Archer & Carpenter's No. 1 Perryman, NE cor. NW SW, Section 32-14-14, was making 22 bbls. naturally from sand at 1,171 89 feet. In the same section, Jordan & Ashley were building a rig for No. 1 Hardridge, SW cor. SE NW. Havell was spudding No. 1 Barber, SE cor. SW SW, Section 31-13-12.

In Muskogee County, the Gilliland Oil Co. shot No. 1 Jefferson, CEL NE NE, Section 10-15-15, with 20 quarts in sand at 1,295-1,308 feet and it was good for 60 bbls. The same company's No. 2 Jefferson, SE cor. NE NE, Section 6-15-15, was drilling at 1,220 feet, and Cook & George's No. 2, SW cor. NW NW, Section 5-15-15, was also drilling at 1,365 feet.

Another duster was chalked up against Creek County when H. F. Wilcox abandoned No. 1 Burton, C NE NE SE, Section 32-15-10, at 3,398 feet. A 10-bbl. well resulted from a shot of 90 quarts in McClung and others' No. 4 Wilson, NW cor. NE SE, Section 28-17-11. The well had been plugged back from 2,833 feet and was shot in sand at 1,788 to 1,810 feet. The Phillips Petroleum Co. was spudding No. 17 Tiger, SW cor. NW SW, Section 4-15-9, and Donnelly & Hall were also spudding their No. 2 Bear, SW cor. SE NW, Section 16-14-10.

A 10,000,000-foot gasser for Tulsa County was brought in by Dillard and others in their No. 1 Perryman, NW cor. NE, Section 9-17-14, coming from sand at 1,472 76 feet. It was shut in. Three wells in Section 4-17-14 were drilling, the Danciger Oil & Refining Co.'s No. 1 Perryman, NE cor. SE NW, at 200 feet, the Lee Drilling Co.'s No. 1 Rentie, at 1,550 feet, and Wade and others' No. 1 Tucker, NW cor. SE SE, at 1,290 feet. The Tidal Oil Co.'s No. 1 River Bed, NW cor. SW SE, Section 1-18-12, was dry and abandoned at 1,400 feet.

Seminole County

In the Wewoka Field, Seminole County, the Dixie Oil Co. was drilling at 410 feet in its No. 1 Walker, SE cor. NE NW, Section 32-8-8, and was below 800 feet in No. 4 Long, CWL NW SE NE, same section. The same company had a rig up for No. 3 Foster, C SW SW NW, Section 33-8-8.

The Magnolia Petroleum Co. was underreaming the 12-inch casing at 785 feet in its No. 1 Morran, CSW SE SW, Section 21-8 8, and was building a rig for No. 1 Lena, NE cor. NW SW, Section 32-8-8. The Producers & Refiners Corp. had timbers on the ground and was digging the cellar for No. 7 Foster, C NE NW NW, Section 33-8-8.

South of Wewoka, R. H. Smith was rebuilding the rig on his gasser, No. 1 Carolina, SW cor. SE NW, Section 23-7-7, which was estimated to be good for 10,000,000 feet from sand at 2,445-55 feet.

In Pawnee County, the Watchorn Oil Co.'s No. 8 Miller, SE cor. NW, Section 33-23-3e, made 640 bbls. naturally from sand at 4,115-17 feet. C. H. Burton's No. 1 Parker, NW cor. SW, Section 32 20-8, was a duster at 2,900 feet. Waxler & Preisler plugged back to the Bartlesville sand in their No. 2 Bijeck, NE cor. SE SE, Section 32-20-8, after a 40-bbl. show, and prepared to shoot it with 20 quarts in sand at 2,511-35 feet. Stone & Braden completed a 40-bbl. producer from sand at 3,068-92 feet in their No. 2 Jackson, C SE NE, Section 16-20-6.

In Lincoln County, the Wilcox Oil & Gas Co. was rigging up No. 1 White, NW cor. SE NW, Section 2-13-6, and the Producers & Refiners Corp. had abandoned location for No. 1 Heinza, SW cor. Section 14-13-6.

In Caddo County, Bowles & White had a steel rig in place for their No. 1 Bisco, C NW SE NW, Section 6-10-8w. The J. C. Cooke Oil & Gas Co. was rigging up No. 1, C NW NW NE, Section 13-8-10w.

In Cotton County, the Empire Gas & Fuel Co. abandoned as dry at 3,085 feet its No. 1 Indian Land, SE cor. Section 5-2s-9w.

The Mississippi Valley Oil Co. was building a rig for its test in Washita County, C SW SW NE, Section 9-8n-15w.

Beckham County

In Beckham County, B. A. Simpson's No. 1 Marshall, C NW SE NW, Section 32-9-23w, was abandoned as a failure at 2,862 feet. Santrock, Curtiss and others were rigging up cable tools for a test in the SW cor. SE NW, Section 14-9-23w.

In Carter County, the Humble Oil & Refining Co. had a rig up for No. 1 Radcliffe, C SE SE SW, Section 20-1s-3w, and was drilling at 622 feet in No. 1 Lyles, C NE SE SE, Section 34-1s-3w. The Magnolia Petroleum Co. was also drilling in No. 5 Lahman, C SW NE NE, Section 25-2s-3w, at 155 feet. The Schermerhorn Oil Co.'s No. 7 Airington, C SE NW SW, Section 30-2s-2w, was a rig. The Cotton Belt Oil Co.'s No. 5 Airington, C NW NE SW, Section 30-2s 2w, was good for 270 bbls. from sand at 2,203-35 feet.

A small show of gas was found in the Owen-Osage Oil Co.'s No. 3, SE cor. NW SE, Section 10-27-11, Osage County, from sand at 1,240-55 feet and the well is drilling ahead at 1,300 feet. The Mutual Oil Co. made a location for No. 8, SE cor. NE SW, Section 33-24-8. The Petroleum Drilling Co. was drilling at 550 feet in its No. 6-A, CWL NE NE SE, Section 17-25-9, and the No. 1 Oil Co. shut down its No. 6, SW cor. SE SW, Section 17-24-9, at 2,240 feet with a show of oil at 2,200 feet from sand topped at 2,173 feet.

The Mutual Oil Co.'s No. 2, NW cor. NE, Section 34-23-8, made 38 bbls. the first 18 hours from the Wilcox sand topped at 2,690 feet and drilled to 2,736 feet, and was still flowing.

Shot in Tonkawa

A number of old wells in the Tonkawa Field were helped by shooting. The Comar Oil Co.'s No. 3-A Endicott, SW cor. NW SE, Section 34-25-1w, was given 40 quarts in sand at 2,495-2,535 feet and made 46 bbls. It had previously been doing 35 bbls. The Amerada Petroleum Corp. treated three of its old wells. No. 22 Woods, CWL NW NE, Section 34-25-1w, was given a 10-quart shot in sand at 1,984-94 feet and was good for 90 bbls.; No. 20 Woods, SW cor. NW NE, same section, was making 225 bbls. after a 100-quart shot in sand at 2,450-2,500 feet; No. 6 Woods, CWL SW NE, same section, was increased from 185 bbls. to a 228-bbl. producer by 20 quarts in sand at 2,152-56 feet.

The Comar Oil Co.'s No. 6-A Clement, CSL SW NW, Section 34-25-1w, was cleaning out without results after a 40-quart shot from 2,530 to 2,550 feet; No. 4-A Clement, CEL SE NW, was given 80 quarts without production from sand at 2,482-2,541 feet; No. 21-A Clement, C NW NW, was also shot with 20 quarts without results.

Other old wells that were treated with nitro were Slick and others' No. 2-C

(Continued on Page 92)

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

INDISPUTABLE EVIDENCE NO. 2

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WICHITA FALLS, TEXAS July 9, 1923

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KIMMELL & DILLARD,

By A. F. Kimmell

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Wyoming Field Operations

By F. B. Taylor

Wellington gas strike, Colorado, thought discovery well of new gas area. No trace of oil so far. Claimed by Union Pacific. Midwest gets six producers in Salt Creek, one of 2,030 bbls., one 1,115 bbls. Salt Creek test believed to show field was doing 100 per cent instead of 45 per cent.

CASPER, Wyo., Nov. 26.—The big gas well at Wellington, Colo., near Fort Collins, is continuing to blow with no signs of diminution, a head has been clamped over the casing with three large valves in place, but the valves have been left open as it is now believed that the pressure has made some holes through the strata at the bottom of the strings and if the well was shut in the gas would force its way up on the outside.

The Union Oil Co. has placed hand operated force pumps as near the well as possible and is forcing mud down between the different strings of pipe, beginning with the 20-inch casing and trying to fill the hole solid to the outside of the 8¼-inch casing. When this is done, the crew expect to close the valves and shut in the well.

The well is producing an estimated 80.000,000 feet daily and, as it has shown no signs of diminishing, it is now believed the gas is coming from a well defined stratum and not from any small sand lens that might play out shortly. This means that the well is recognized as a discovery well of a new gas area in Colorado and its importance can hardly be estimated as it will undoubtedly lead to much deep drilling over the whole State and cause an extensive campaign of exploration in the deep sands of the Cretaceous and Carboniferous formations.

It was noted that gas was coming up between the 10-inch and 8¼-inch pipe at the well and this led the officials of the Union to try and mud the four strings of casing together before attempting to shut the well in.

Union Pacific Claims It

The Union Oil Co. has made a location for another well to be started at once and a third location for a well that may be commenced soon. A legal phase has been injected into the discovery by the claim that the Union Pacific interests have a legal title to the land the well is located upon. It is claimed the Union Pacific reserved the mineral rights of this land when it turned its interests in the same to the surface owners; if this is the case, the Union Oil Co. is without title to its discovery.

The conditions existing in many parts of the Rocky Mountain region as regards titles are such that many oil companies will not venture to take leases for fear of becoming involved in a legal tangle. It appears that sharpers have taken advantage of the loop holes in the leasing bill and other laws and have tied up tracts so that the whole thing is a maze of contradictory statements in which even the lawyers themselves become lost. This phase is aptly illustrated in the many suits and counter claims that have come up in the Salt Creek Field in the past few years and Salt Creek is not as badly mixed up as many other regions.

Auction of State Lands

The State of Colorado held an auction Friday of State lands for the prospecting for oil and gas. Of the 1,600 acres placed on sale, leases were granted on 540 acres only. One tract, in Section 36-10-69, which adjoins the section on which the big gas well is located, brought $110 per acre. The total realized as bonus from the sale amounted to $28,000. From the high price of $110 per acre the bids went down to one of $10 per acre which was the lowest recorded.

While the press of the cities near the big well have become quite excited over the strike and the people who own lands are holding them for high bonus, the oil men in general have refused to go wild over this strike. In fact the oil fraternity appears to be watching the interest shown by others with more concern than they display in the strike itself. Returning operators from the well describe the antics of promoters and their efforts to obtain lands while they pass over the strike with only casual remarks. Already many papers of northern Colorado are referring to the area as an "oil field" or the Wellington oil field, when it is a fact that no oil whatsoever has been found, not even any showing of crude in the well. In fact, from the indications this well has shown, the area will turn out to be a gas area much like the Wertz Dome in the Lost Soldier Field where a very heavy gas pressure is found that also produces a condensate of naphtha. It has been found in many oil regions that the presence of naphtha in large quantities in gas is rather an indication that the structure contains no oil at all, while a very dry gas under heavy pressure may be indicative of oil on the structure. Wertz Dome, Billy Creek, Byron and other gas fields of this region produce gas that is considered wet, but it is not believed that these structures contain oil where the gas is found.

Midwest's Six Producers

The Midwest Refining Co. completed six producers the past week in the Salt Creek Field and has seven wildcats in active operation. While not officially completed, the Skull Creek well, south of Newcastle, in Weston County, looks dusty and the oil fraternity appears to consider it a dry hole now. It was reported last week as having a showing of oil and gas on top of the Lakota sand.

The Midwest completions were as follows: Midwest Oil Co., on Section 24-40-79, started off at 1,115 bbls. from the second Wall Creek sand at 1,575 feet; on Section 11-40-79, the same company has a producer in the second Wall Creek sand at 2,430 feet that is making 2.030 bbls. and is one of the best producers in the field today; on Section 34-40-79 the same firm has a producer of nominal size, estimated at 50 bbls. in the second Wall Creek sand at 1,530 feet and on Section 2-39-79, the same firm has a producer good for 250 bbls. in the second Wall Creek sand. The same company also drilled in a well that made nearly 500 bbls. on this same section, 2-39-79, that found the second Wall Creek sand at 1,670 feet. The Wyoming Associated Oil Co. drilled in a producer good for 230 bbls. on the famous School Section, 36-40-79, finding the second Wall Creek at 1,890 feet.

The Neiber Dome wildcat of the Midwest is deep and the drilling is slow; this well is now at 3,410 feet and the sands are expected around 4,500 feet. It is being drilled with cable tools. The Neiber Dome is a well known geological structure, but has always been thought to be very deep drilling so the companies have not paid much attention to it. The present test of the Midwest is the first well to be put down on the structure although the Ohio Oil Co. started a well some months ago. The Ohio's well was stopped by legal difficulties.

The rotary test being drilled on the Golden Eagle Dome in Hot Springs County is down about 1,900 feet and making hole fast. This is a test of both the structure and this method of drilling in the hard formations of the Basin region and it appears to be successful in the drilling, whether any oil or gas is found or not.

New Mexico Operations

The Midwest is also drilling at Ambrosia Lake in New Mexico and at the Hogback and San Mateo in that State. The well that found gas at about 900 feet on the North Casper Creek Dome in Natrona County, Wyoming, is drilling slowly and is only 1,130 feet after several weeks' of work.

The carbon black and gasoline extraction plant that is being placed as an experiment in the Lance Creek Field in Niobrara County, is to commence operations. This plant is expected to extract the gasoline content of the natural gas from the wells in the Lance Creek Field, make carbon black of the residual gas and then utilize the heat so generated in the manufacture of power to drive electric generators, the electricity so made being sent to nearby towns and cities for use.

The Western States Oil & Land Co. is starting two new holes at Hamilton Dome, in Hot Springs County, and a local syndicate of Thermopolis is to start a wildcat on what is termed the Sherburne Dome about 4 miles southwest of Thermopolis. This dome is reported to cover around 1,320 acres and the Embar sand is expected about 1,110 feet under the surface. The sands will hold black oil, if found productive.

An effort was made to shut off the flow of water in the Alaska Development Co.'s well on Pine Mountain in Natrona County. This well came in with a large gas flow and immediately started making water which has caused considerable trouble since. The crew used several cans of asphalt dropped to the bottom of the hole and then placed several hundred pounds of iron filings on top of the asphalt, driving it all solidly into the bottom of the hole with the tools. The result was a reduction in both the gas and water flow.

Carbon County Gasser

The new gasser on the Eight Mile Lake structure south of Rawlins in Carbon County is holding up as a good producer and the Hatfield Oil Co. is preparing to move another rig in at once and drill a second well in spite of winter weather.

The Public Service Commission has granted a license to operate a stage to some Rawlins people. This stage will be one of the latest type motor busses and will travel between Casper and Rawlins, 125 miles. To reach Rawlins from Casper by rail, a traveler must go around a distance of about 350 miles and take two days, but by going overland, it is possible to make the distance in about six hours. People from the northern part of the State can come to Casper by the new North & South Railroad from Salt Creek and then take this new bus line to Rawlins, cutting down both the time and expense of reaching the southern part of Wyoming.

Salt Creek Test

The test of the production in the Salt Creek Field now being carried out, is to be completed by November 30. It is expected that the field will show that the wells are producing at about 100 per cent now instead of 45 per cent. However, the exact status cannot be had until the test is completed.

The wildcat on Sheldon Dome of the Marine Oil Co., about 50 miles north of Riverton, in Fremont County, is having trouble with a parted string of casing. The hole is now underreaming to set a heavier string of pipe at 3,175 feet.

The Ohio Oil Co. has shut down all work on the Rex Lake Dome in Albany County; this is the well that is showing for around 600 bbls., but the Ohio does not wish to go further into the development until spring.

Field Shipments

Field shipments of the Rocky Mountain Field decreased 4,925 bbls. the past week due to several nominal fluctuations in the fields, Salt Creek fell off a little due to colder weather.

Salt Creek	123,000
Teapot	4,700
Big Muddy	4,375
Grass Creek	3,025
Elk Basin	1,710
Notches	180
Greybull	165
Rock River	3,485
Lance Creek	1,750
Poison Spider	650
Osage	625
Hamilton Dome	425
Pilot Butte	85
Lander	320
Lost Soldier	4,845
Ferris	110
Cat Creek	4,575
Sunburst	860
Miscellaneous	600
Total	155,475

Ohio Oil Co.'s Operations

A disappointment was had when the Ohio Oil Co. found a water flow in the Muddy sand on the O'Brien Springs Dome of the Lost Soldier Field. The Muddy sand was struck at 4,200 feet and the hole started to fill with water. A string of casing will be run to shut off this water and the well drilled to the Dakota sand under the Muddy.

The Ohio's new gusher on Section 4-35-65 in the Lance Creek Field is still holding up at 2,900 bbls. daily and is creating considerable interest in Lusk and nearby towns. However, the oil men are skeptical of big wells in Lance Creek and appear determined to wait a while before jumping in there as the previous big wells did not last long enough to warrant extensive operations. Lance Creek is the only field in the northwest that did not hold up in production. The wells there would start off big and in a few weeks or months, be down to a production that did not pay for the operation of the lease.

Wyoming Premier Foreclosed

Notice has appeared in the local papers that the Wyoming Premier Oil Co. has defaulted on a mortgage it gave to the Warm Springs Oil & Development Co. for a total of $37,037 and the Warm Springs Oil & Development Co. assigned the mortgage to C. B. Shaffer when the Shaffer interests took over the Warm Springs Field. C. B. Shaffer is to foreclose on the property of the Wyoming Premier Oil Co. and a sheriff's sale of the latter oil company's property will be held at the court house at Thermopolis on December 7, at 11 o'clock.

The property of the Wyoming Premier Oil Co. consists of 640 acres with four wells and equipment for drilling and operating the lease, located on Sections 34 and 35-43-94, in the Warm Springs Field in Hot Springs County, Wyoming. This is a black oil operation and a pipe line from the field to Thermopolis is the outlet for the production. A refinery at Thermopolis has handled the crude and is included in the property taken over by the Shaffers when they obtained the property.

The Markham well drilling on the Lysite Dome, about 5 miles east of the

(Continued on Page 106)

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California Field Operations

By L. P. Stockman

San Martinez Oil Co. deepens Long Beach well which makes 2,100 bbls., best of week. Superior Oil's No. 2 Miller, 1,700 bbls. Amalgamated's No. 4 Dewenter, Santa Fe Springs, makes 1,500 and No. 1 Green 1,750 bbls. Standard's No. 8 Weisel, 2,250 bbls. Superior's No. 7 Torrance 1,750 bbls.

LOS ANGELES, Cal., Nov. 23.—For the first time since June, 1922, the monthly average production of crude in California showed a decline from the average of the previous month. The daily average production during the month of June, 1922, was 357,731 bbls., which figure has steadily increased, reaching a maximum during September, 1923, of 858,750 bbls. daily. The average production during October was 792,787 bbls., a decrease of 65,963 bbls. from the maximum daily average production of 858,750 bbls., established during the previous month, September. The decrease in State production is due to the rapid decline at Stanta Fe Springs where the output dropped from 314,662 bbls. daily during September. to 258,209 bbls. daily during the current month, October. Huntington Beach also registered a decline, the daily output during October being 78,897 bbls., compared with 89,628 bbls. during September. Long Beach, on the other hand, registered an increase of 3,609 bbls. daily, the production during October being 244,527 bbls., compared with 240,918 bbls. during the previous month. Torrance and Compton both showed slight increases, the former showing a gain of 5,305 bbls. a day, while the latter increased 152 bbls. daily.

Among the older fields, Kern River shows the largest change, the daily average production during October of 15,019 bbls., being 3,983 bbls. per day less than the average daily output of the previous month. This decrease is due to the shutting in of almost an equal amount of production by the Associated Oil Co. at the close of the previous month. Total production during the month was 24,576,400 bbls, 18,030,619 bbls., or approximately 70 per cent, of which was produced by Santa Fe Springs, Long Beach and Huntington Beach.

The output during the current month brings the total production for the year to date to 219,431,800 bbls., compared with a total yearly output during 1922 of 139,626,876 bbls. Of the total State production during 1922 of 139,626,876 bbls., Long Beach, Santa Fe Springs and Huntington Beach produced 59,424,820 bbls., approximately 42 per cent of the total. During the present year, to date, Long Beach, Santa Fe Springs and Huntington Beach have produced 152,421,953 bbls. out of a total of 219,431,800 bbls., approximately 69 per cent. At the present rate of production, the total output during 1923, will be in excess of 264,000,000 bbls.

Increase in Stocks

The increase in stocks during the past month was 2,852,941 bbls., an increase of 480,167 bbls. over the surplus accumulated during the previous month.

Stocks in California are segregated into three classifications, viz: (a) heavy crude, that below 20 degrees A. P. I., and residuum; (b) light crude, 20 degrees A. P. I. and above, and (c) tops. By watching the changes in any of these classifications of stocks one can tell to a certain extent whether the sales of fuel oil or gasoline are high or low and which is causing the change. For instance, if heavy crude and residuum show a decrease, it is a fairly accurate indication that the demand for fuel oil is brisk, while if light crude, that above 20 degrees shows a decrease, it is safe to assume that the demand for gasoline has increased. A decrease in stocks of light crude by itself is not always indicative of an increasing gasoline demand. The effect which this decrease in light crude has on the stock of tops must also be considered for the refiner might be faced with an abnormal demand for residuum and store the tops in steel tanks. It can ben seen that this operation will result in a decrease of light crude, but an increase in the stocks of tops.

During the recent heavy overproduction of crude, which reached enormous proportions nearly over night, practically all the marketing companies were very badly pressed for storage. If sufficient steel storage had been available it would have been far more economical to store this crude in these containers, but the limit of steel storage was soon exceeded. It was a physical impossibility for the marketing companies to erect sufficient steel tanks to store this fast accumulating surplus crude and, even were these steel tanks available, the cost of erecting them, considering the fact that additional acreage must be secured, was prohibitive. The larger companies, therefore, topped this light gravity oil, most of which was coming from Long Beach, Santa Fe Springs and Huntington Beach, and stored these tops, a potential gasoline stock, in steel tanks and stored the residuum in concrete reservoirs ranging in capacity from 250,000 bbls. to 3,000,000 bbls. each. The amount of tops on hand at the close of last month, October 31, was 12,104,654 bbls.

Storage Compared

Some idea of the amount of oil topped can be gained by comparing the present storage with that on hand October 31, 1922, of approximately 1,500,000 bbls. The recovery of gasoline from these tops in storage will average about 80 per cent which, when rerun, should yield over 9,000,000 bbls. of gasoline. It is curious to note that although the total increase in stocks in California for the current year was 27,164,622 bbls., only 1,727,903 bbls. were heavy crude (that below 20 degrees) and residuum. During the same period light crude (that above 20 degrees) increased 16,244,877 bbls., while tops registered a gain of 9,191,842 bbls. This increase in light gravity oil was made possible by the use of concrete reservoirs for the storage of this class of oil During the early part of the past year, with refineries working to capacity and unable to top all the light crude being received, it was found necessary to run it direct to concrete reservoirs. To take care of the loss through evaporation most of these reservoirs were equipped with vacuum feeds which led to small absorption units where the gasoline content of the escaping gas was recovered. In this manner the only loss sustained was through shrinkage; evaporation losses being reduced to a minimum. In several instances the gas, after passing through these absorption units, was utilized to fire boilers. It can be seen that although there was a large production of crude, most of the larger companies reduced losses to a minimum, several even going so far as to utilize gas made available as the result of evaporation. Producers were not nearly as economical as the marketers and pipe line companies, many of them being guilty of willful negligence in the waste of gas and oil. There was a very noticeable decrease in the amount of development work done during the month, the number of active drilling wells being 60 less than the number drilling the previous month. There were only 94 rigs erected, compared with 104 during the previous month, while the number of producing wells during the month was 305 less than during September. Completions, however, showed a slight increase, due to development at Long Beach and Torrance.

Long Beach

There were no unusually large wells completed at Long Beach, the best producer, a 2,100-bbl. well, standing to the credit of the San Martinez Oil Co. This well, a former small producer, at 4,250 feet, was redrilled and deepened to 4,888 feet. It is on the southeastern slope of the hill and had heretofore been a rather unsuccessful producer because of the inability of the company to secure a successful water shut-off. Upon its recompletion the well yielded a substantial production, 2,100 bbls. a day, the oil testing 24.8 degrees and showing a cut of 2 per cent. It was recompleted with a 4¾-inch oil string landed on bottom and is flowing through a ¾-inch bean under a pressure of 600 pounds. The San Martinez Oil Co. was one of the pioneers of the field, but because of a comparatively small capitalization, which slowed up development work when several of its wells were held up because of water trouble, it has only developed a substantial production within the past few months. This is the company's fourth producer, the aggregate production being about 3,500 bbls. a day.

The Hub Oil Co. completed two wells with an aggregate daily production of 1,600 bbls. The company's two new producers were No. 1 Ifland and No. 2 Rissman, the former the larger. Both are recompletions, No. 1 Ifland having been redrilled and deepened from 3,874 feet, its former production depth, to 4,540 feet, while No. 2 Rissman was deepened from 3,132 feet to 4,953 feet. Both wells, flowing through ½-inch beans, were completed with 4¾-inch oil strings, the former being cemented through perforations at 4,150 feet and the latter at 3,805 feet. No. 1 Ifland, in the western extension of the field, registered an initial production of 1,100 bbls. a day, while No. 2 Rissman is making a little better than 500 bbls. daily.

The Shell Oil Co. put three wells on production, two being new wells and one a recompletion. The two new wells were No. 4 Cresson and No. 4 Marcellus, the former showing an initial production of 1,150 bbls., while No. 4 Marcellus put 1,049 bbls. into storage during the first 24 hours. No. 4 Cresson, completed at 4,087 feet, is flowing through a ½-inch bean under a pressure of 450 pounds, and No. 4 Marcellus, brought in from 4,698 feet, is flowing through a ¾-inch bean under a pressure of 400 pounds. The oil from both tests approximately 22.8 degrees, the output from No. 4 Cresson showing a cut of 1 per cent, while that from No. 4 Marcellus cuts 3 per cent. The Shell's recompletion was No. 1 Church, redrilled and deepened from its former production depth in the upper sands at 3,281 feet to 4,908 feet. Upon its recompletion this well showed an initial production of 1,750 bbls. of 23.5 gravity oil.

Probably the most interesting well in the field is the Shell's No. 1-A Connett, drilling in the extreme southeastern end of the field. This well was put on a production test at 5,105 feet and flowed for six hours at the rate of 300 bbls. a day. After the completion of this test the well was killed and deepened to 5,020 feet, a string of 6¼-inch casing being cemented at this depth. The cement will be drilled out within a few days and should this well result in a commercial producer, this section of the field will be extended nearly a half mile farther.

The Petroleum Midway Co. (California Petroleum) finished two wells during the week but was only successful in placing one on production. This new producer was well No. 1 on Griswold lease No. 2, which was completed at 4,319 feet. It is flowing 200 bbls. a day of 20.3 gravity

(Continued on Page 100)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Miskianza, November 12, New York, crude	63,000
Harold Walker, November 12, New Orleans, crude	75,000
Matinicock, November 12, New York, crude	67,000
San Fabian (Br.), November 12, Tampico, crude	125,000
Wm. M. Irish, November 13, Philadelphia, gasoline	80,000
Agwihavre, November 14, New York, crude	94,000
A. C. Bedford, November 15, New York, crude	108,000
John D. Rockefeller, November 15, New York, crude	77,000
W. W. Mills, November 15, Philadelphia, crude	79,000
Chester Sun, November 15, New York, crude	74,000
Frederick R. Kellogg, November 15, New Orleans, crude	73,000
M. F. Elliott, November 17, New York, crude	80,000
Hampton Roads, November 17, Boston, crude	74,000
H. M. Storey, November 17, New York, crude	107,000
Cerro Ebano, November 17, New Orleans, crude	95,000
Gargoyle, November 17, Philadelphia, gasoline	80,000
J. M. Danziger, November 18, New Orleans, crude	74,000
Coastwise	
Paul Shoup, November 12, Avon, crude	75,000
Hulaco, November 12, Avon, Crude	76 000
J. A. Moffett, November 12, Richmond, crude	64,000
R. J. Hanna, November 13, Richmond, crude	79,000
Los Angeles, November 14, Martines, crude	74,000
Lubrico, November 15, Richmond, crude	81,000
U. S. Tanker Neches November 16, San Diego, fuel	55,000
La Placentia, November 16, Martines, crude	77,000
J. A. Moffett, November 16, Richmond, crude	62,000
Cathwood, November 18, Martines, crude	80,000
Exports	
Yankee Arrow, November 13, Shanghai, fuel	97,000
From San Francisco	
Richmond, November 13, Astoria, fuel	62,000
Kewanee, November 14, Portland, refined	28,000
San Dunstano (Br.), November 14, London, gasoline	55,000
Solen (Br.), November 14, Shanghai, fuel	67 000
Capt. A. F. Lucas, November 15, Seattle, refined	32,000
Tejon, November 15, Portland, fuel	66,000
Charlie Watson, November 15, Coos Bay, refined	17,000
San Fraterno (Br.), Valparaiso, fuel	103,000
Frank H. Buck, November 16, Linnton, fuel	62,000
El Segundo, November 16, Point Wells, refined	33,000
Atlas, November 16, Astoria, refined	16,000
W. S. Porter, November 17, Seattle, fuel	54,000
H. T. Harper, November 17, Seattle, refined	34,000
China Arrow, November 18, Orient fuel	99,000
From Port San Luis	
Meton, November 16, Manila, fuel	79,000

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GUIBERSON

BETTER BE SAFE THAN SORRY

North-Central Texas Field

By Dan F. Dugan

Humble Co.'s No. 1 Canton, Breckenridge, makes 500 bbls. Moore and others' No. 1 Faulkner, dry, limits Ackers territory. Sixty-Six Co.'s No. 3 Wilson, Archer, 300. Jetter and others' wildcat, south of Wilmot, bailing 200 bbls. Kentucky Oil Corp.'s semi-completion, near Holliday, important extension.

FORT WORTH, Tex., Nov. 26.—Contrawise to the majority of guesses daily production runs for the past seven days in the North Central Texas Field reported a loss of 3,775 bbls. The runs for the week totaled 112,255 bbls. as against 116,030 for the previous seven days. The major gains and losses were distributed as follows: Iowa Park (which is credited with the greater per cent of Archer County's production) made a loss of 335, Stephens County 1,115, Eastland County 885, the Electra Pool 400 bbls., and the wildcat pools 1,215 bbls. daily. The Burkburnett Pool made a small gain of 175.

Stephens County

Showing a small increase in activity on account of the purchasing pipe line companies connecting up with capped wells and drilling tests that have reached the pay strata, three tests are credited with late field reports from Breckenridge as showing for commercial producers. The Humble Oil & Refining Co.'s No. 1 Caton, in the northeastern part of the Breckenridge Pool, is producing estimated 500 bbls. at the regular 3,200-foot depth.

Scott & Bateman's No. 1 Davis is good for 250 bbls. initial at 3,285.

In the Curry Pool the No. 3-C Shipley of Fred B. Foster and others is reported making 300 bbls. initial at 3.170 feet.

It is reported from Cross Plains, Callahan County, that Moore and others have bailed No. 1 Faulkner dry at 2,585 feet. This test is just west of Moore and others' No. 2 Ackers, which recently promised the opening of a new pool between the Pioneer Pool and Cross Plains. The new completion apparently limits the new producing territory on the west.

It is reported from Amarillo in the Panhandle sector that J. W. Wilson and others are building a standard rig and will drill in Section 73, Block 46, H. & T. C. R. R. survey, 5 miles north of Panhandle, and 4 miles north of the Burnett ranch. Bunk houses have been built for the drilling crews and water connections are being made to start actual drilling operations in the next couple of weeks.

Archer County

Several sales are reported for undeveloped and producing acreage in Archer County. The Empire Gas & Fuel Co. is reported to have purchased from Charles Verschoyle a tract of 50 acres out of Lots 13 and 14, Section 23, Wilson lands, north of the Wilmot producers, for a consideration of $105,000. The sale also included one well drilled to the 1,580-foot pay.

J. V. Henley sold an interest in the Wilson tract, comprising 95 acres, with two producing wells and another drilling to C. H. Clark and others for $150,000.

Two smaller sales are recorded. T. O. Shapple purchased a part of the Stidham-Trasher holdings, which include the discovery well and 150 acres on the Daume tract near the south line of Wichita County, for a consideration of $30,000, and Gwynn & Hudspeth sold 40 acres to Maxson & Johnson, in Block 10, Section 27, A. T. & N. C. survey, for $8,000, on which they will drill a test at once.

Fair weather prevailed nearly all week and development activities are showing considerable increase. The largest completion for the week is the Sixty-Six Oil Co.'s No. 3 Wilson, which is credited with showing initial 300 bbls. daily at 1,585 feet.

Spraying oil in all directions for a distance of several hundred feet, Jetter & others' No. 1 Wilson, in Block 315, Geraldine Townsite, unexpectedly blew itself in on Tuesday. The well, which is south of the Minchew-Wilmot producers, is an absolute wildcat, and adds a big scope of territory to the productive area in a southerly direction. The test has been standing with a hole full of oil for the past 10 days awaiting a change in weather before drilling in. A late field report credits the well as bailing around 200 bbls. daily at 1,590 feet.

Featherstone and others' No. 1 Egbert, north and west of the Jetter well, in Geraldine Townsite, encountered a rich looking sand at 1,594 feet, which promises a commercial producer. The picking up of the sand at this location will open a stretch of land for drilling and several tests are planned on nearby leases at once.

In the south part of the county in the vicinity of the Swastika Pool, the test of Clark-Clayton's No. 28 Richardson is in a sand at 1,360 to 1,370 feet, and is showing for a good well. The test is at present having some casing trouble.

The test of Norton & King's No. 1 O'Donnell, about 2 miles south of the defined area of the Swastika Pool, is in a good sand at 1,275 to 1,288 feet, showing plenty of oil, but experiencing some water trouble due to leaky casing.

Several other tests in this district, which have been shut down on account of weather conditions, are preparing to resume drilling.

Wichita-Electra

Field operations in this section took on a little added impetus on account of the clearing weather. Many tests shut down through inability to get fuel oil and supplies are preparing to resume drilling.

The best completion is The Texas Co.'s No. 285 Waggoner in the Seale-Morris survey, South Electra Pool. The top of the sand was picked up at 1,913 feet and was drilled a few feet. The well was put on the swab and it is good for 225 bbls. daily.

The outstanding feature was the semi-completion of what looks to be a commercial producer and which promises to add a big scope of territory to the proven field, by the Kentucky Oil Corp.'s No. 1 Davis, about 12 miles southwest of Wichita Falls, and northeast of the town of Holliday. The top of the sand, encountered at a depth of 1,319 feet, after penetration, showed considerable oil, casing was set and bailing was started. Each bailer came up filled with oil and from present indications when placed on the pump the well will make a fair producer.

North of the Archer line in Wichita County the Texas-Wonder Oil Co.'s No. 1 Dutton has started drilling. This test is about 2 miles southwest of the Kentucky Oil Corp.'s No. 1 Davis. Future operations on this test will be watched with interest as it will mean another big extension in that part of Archer and Wichita Counties, if the test is a commercial producer.

East of Wichita Falls about 2 miles, the deep test of the Lucky Hill Oil Co., No. 1 Lautenslager, has reached a depth of 2,000 feet, and preparations are being made to replace the present rig with a heavier rotary. This test will drill to a depth of 3,000 feet, unless oil in paying quantities is found. Two slight shows of oil have been encountered so far, but not enough oil to warrant testing.

Burkburnett-Hirschi

After nearly a complete shut down in the Hirschi Pool on account of the bad roads drilling has been resumed on a number of tests.

Pigg and others' No. 17 Hirschi set 6⅝-inch casing on the sand at 1,830 feet. It was drilled to 1,865 feet and is flowing by heads. The Sun Oil Co.'s No. 24 Hirschi is on the sand at 1,855 feet and shows up for the next producer. Casing is set and cemented on the sand in the Gulf Production Co.'s No. 13 Dale at 1,811 feet, standardizing preparatory to completion. A late report credits it with drilling and showing for 600 bbls. No. 14 is drilling at 1,300 feet.

In the Sunshine Hill Pool, a few years ago the scene of the county's greatest activity, Kemp & Ferris have a near completion in the No. 5 Eads south of the road in a sand at 977 feet, swabbing between 50 and 75 bbls. daily.

Completions reported in the Burkburnett and Hirschi Pools are Langford and others' No. 7 Langford, 66 bbls. at 1,850 feet; McDabb Oil Co.'s No. 2 Saunders, dry at 1,870 feet; John O'Neil's No. 2 Saunders, 140 bbls. at 1,855 feet; Sun Oil Co.'s No. 23 Hirschi, 100 bbls. at 1,870 feet.

Drilling: Baldwin Brothers' No. 12-C Kennedy had a water sand at 1,230 feet, are pulling casing and will drill deeper; Coleman Drilling Co.'s No. 1 Hewitt, drilling in shale at 1,370 feet; Howell and others' No. 1 Van Horn, drilling at 1,485 feet; Langford and others' No. 8 Langford, shut down for fuel oil at 1,810 feet; as is Morgan and others' No. 1 Chapman at 1,795 feet; McDabb Oil Co.'s No. 2 Potter, cleaning out to bottom and bailing with a small showing of oil at 1,863 feet; No. 3 Saunders, drilling at 1,825 feet; Magnolia Petroleum Co.'s No. 90 Reilly, fishing for lugs at 637 feet; No. 99 Reilly, drilling at 1,880 feet; No. 7 Holtzen, moving in a machine to drill deeper at 1,804 feet; John O'Neil's No. 2 Saunders, running 5⅜-inch casing and showing oil at 1,825 feet; No. 4 Saunders has a slight show of oil, was shot and now drilling in shale at 1,870 feet; Perkins and others' No. 1 Saunders, flowing 165 bbls. from a sand at 1,860 feet; No. 2 Saunders, cemented 6⅝-inch casing on top of an oil sand at 1,824 feet and shut down for cement to harden.

Wichita County—Electra

Completions: The Texas Co.'s No. 285 Waggoner, 225 bbls. at 1,920 feet; Texhoma Oil & Refining Co.'s No. 2-B Burnett, 25 bbls. at 905 feet; Stedham and others' No. 2 Daume, 50 bbls. at 1,830 feet.

Drilling: Kruger and others' No. 7 Waggoner, drilling in brown shale at 1,205 feet; Magnolia Petroleum Co.'s No. 6 Douglas, drilling at 1,015 feet; Memphis Petroleum Co.'s No. 3 Hoanaker, at 115 feet; Rowe Drilling Co.'s No. 1 Waggoner, had a water sand at 1,500 feet and pulling casing to drill deeper; Texhoma Oil & Refining Co.'s No. 1-J Waggoner, drilling at 1,950 feet; Empire Gas & Fuel Co.'s No. 26 Burnett, shut down for orders on top of a sand showing oil at 1,628 feet; Fisher and others' No. 3-B Fisher, drilling in a broken sand at 1,580 feet; Herford Oil Co.'s No. 1 Allingham, running 5⅜-inch casing with a packer at 1,915 feet; Hartford Trust Co.'s No. 6 Burnett, cleaning out to bottom at 700 feet; Magnolia Petroleum Co.'s No. 26-A Waggoner, swabbed 25 bbls. first six hours at 1,590 feet; No. 5-B Waggoner, has a slight showing of oil at 970 feet and drilling at 1,130 feet; No. 1 Pere Waggoner, drilling at 1,475 feet; Noel and others' No. 1 Waggoner, shut down for 5⅜-inch casing with tools in the hole at 1,950 feet; Panhandle Oil & Refining Co.'s No. 1 Marshall, drilling at 300 feet; Perkins and others' No. 10 Burnett, rigging up a rotary over an old hole at a depth of 505 feet; Perkins and others' No. 1 Burnett, showing oil and water and shut down for fuel oil on top of a sand showing oil at 1,824 feet; Simms Oils Co.'s No. 13 Burnett, swabbed 220 bbls. first 24 hours, not yet completed at 1,535 feet; Texhoma Oil & Refining Co.'s No. 10-F Waggoner, a small show of oil at 1,910 feet, and drilling in shale at 1,930 feet; No. 11-F Waggoner, a fishing job at 1,880 feet; No. 27-A Waggoner, drilling in blue shale at 1,860 feet; Carter and others' No. 2 K. & K., drilling at 1,115 feet; Chappell and others' No. 1 Jackson, at 405 feet.

Wilbarger County

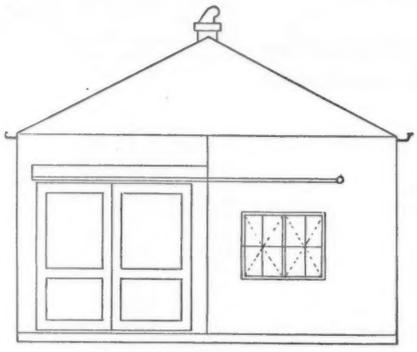
Drilling: Robinson and others' No. 1 McCaleb, drilling at 2,045 feet; Knight and others' No. 1 Potts, at 1,405 feet.

Archer County

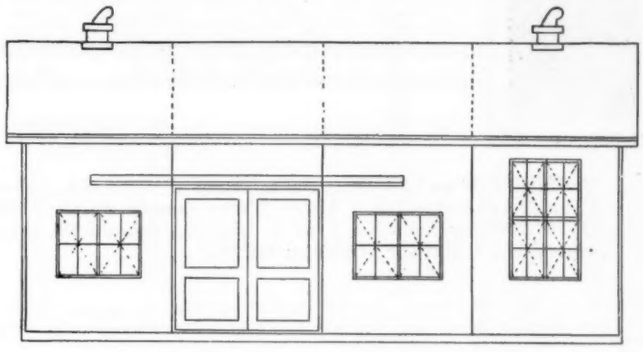
Completions: Barkley Meadows' No. 1 Wilson, 60 bbls. at 1,550 feet; Barnes and others' No. 1 Wilson, 70 bbls. at 1,610 feet; Burns and others' No. 1 Netherton, dry at 1,755 feet; Chenault and others' No. 4-D Wilson, 25 bbls. at 1,595 feet; Empire Gas & Fuel Co.'s No. 1 Wilson, 17 bbls. at 1,620 feet; Maer and others' No. 1 Parrish, dry at 1,800 feet; same company's No. 6 Carter, 100 bbls. at 1,580 feet; 66 Oil Co.'s No. 3 Wilson, 300 bbls. at 1,585 feet; Staley and others' No. 3 Carter, 60 bbls. at 1,585 feet; Stone and others' No. 1 Wilson, dry at 1,650 feet.

Drilling: The Texas Co.'s No. 8 Carter Brothers, trying to pull 6⅝-inch casing at 1,565 feet; No. Carter Brothers, shut down; Barkley & Meadows' No. 2 Wilson, drilling in brown shale at 1,200 feet; Bohler and others' No. 2 Wilmot, rigging up to pump and test an oil sand at 1,605 feet; Boyd and others' No. 1 Carter, drilling at 1,235 feet; Chenault and others' No. 4-C Wilson, standardizing on top of an oil sand at 1,578 feet; No. 5-D Wilson, rigging to pump and test a sand showing some oil at 1,590 feet; Cranfill and others' No. 1 Wilson, drilling at 1,565 feet; Dale and others' No. 6 Wilmot, drilling in brown shale at 1,550 feet; Dilday and others' No. 1 Ferguson, drilling without any showing at 3,010 feet; Dixon and others' No. 1 White, drilling in brown shale at 1,615 feet; Empire Gas & Fuel Co.'s No. 1-B Wilson, shut in on top of an oil sand at 1,400 feet; Featherstone and others' No. 3-B Wilson, drilling at 1,345 feet; No. 2-C Wilson, drilling at 1,225 feet; Gatewood and others' No.1 Boone, drilling in blue shale at 1,665 feet; Grandberry Drilling Co.'s No. 1 Wilson, rigging to test an oil sand at 1,600 feet; Gwynn and others' No. 4 Mrs. Carter, rigging to pump and test a sand at 1,580 feet; No. 2-A Mrs. Carter, drilling at 255 feet; Johnson and others' No. 1 Wil-

(Continued on Page 88)



FRONT ELEVATION



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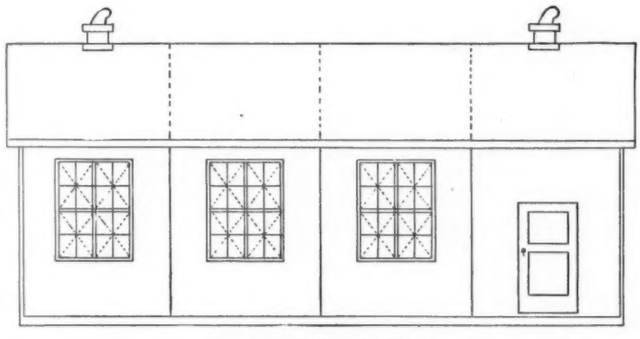

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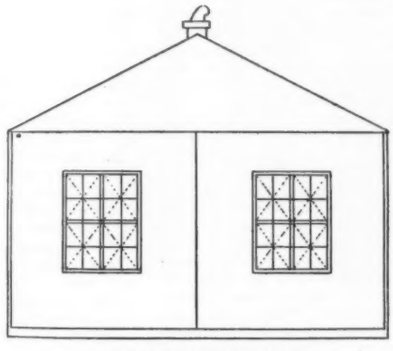

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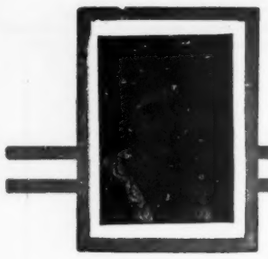

North Louisiana-Arkansas

By M. L. Vaughn

Production drops 7,305 bbls., due to slump of 10,245 bbls. in heavy Smackover. Page & Associates' No. 1 Alphin, Union County, up to 15,000 bbls. Humble Oil & Refining Co.'s No. 1 E. G. Murphy, flows 6,000 bbls.; Caldwell and others' No. 1 Murphy swabbing 500 bbls.

SHREVEPORT, La., Nov. 26.—Fluctuations in average daily pipe line runs since September seem to furnish no decided indication of a sharp decline in production. Scrutiny of the pipe line runs for the past nine weeks shows an average of approximately 184,000 bbls. daily. The average for the past week was approximately 180,000 bbls. and for the preceding week 187,000 which maintains the average closely. It is true that the peak production reached in June, 1923, of over 250,000 bbls. daily has been materially reduced. This reduction represents a drop from peak of about 71,000 bbls. in North Louisiana and 182,000 in South Arkansas, during the present year to a little over 57,000 and 121,000, respectively, which are the lowest figures since the peak was reached. The past week's runs show a decline of 7,305 bbls., which is much more than explained by a loss of 10,245 bbls. in heavy Smackover runs. The offset being through gains of 490 bbls. in Haynesville and 2,130 bbls. in light Smackover production. Following is distribution for the past week:

North Louisiana	
Caddo, light	8,760
Caddo, heavy	2,455
De Soto-Red River	5,490
Elm Grove	1,050
Haynesville	24,130
Homer	9,165
Bellevue	6,680
Total	57,730
South Arkansas	
El Dorado	11,645
Calion	7,840
Smackover, light	19,890
Smackover, heavy	79,900
Stephens	2,740
Total	122,015
Total both areas	179,745
Total last week	187,050
Decrease	7,305

Texas Pipe Lines

Completion is announced of the Texas Pipe Line Co.'s construction program for the year 1923. This included looping the Oil City-Houston main line near Logansport and Ardis, La., and construction of a 10-inch (the largest crossing the Red River at Shreveport) line from Ardis to Louann, Ark., in the Smackover area. This completes the third crossing of the Red River at Shreveport.

Owing to a number of expensive breaks having occurred, precautions were taken in laying this crossing to secure the greatest possible efficiency of maintenance. The line was given a wide upstream curvature with a view to having its automatic adjustment to the shift of detritus embed itself firmly beyond reach of the treacherous currents of the river. The river section of the line is 2,175 feet in length and is especially fortified by unusually heavy shore sections and by 1,500-pound collar clamps.

Cementing Patent

Action was taken by the Shreveport branch of the Mid-Continent Oil Association, November 19, with a view to protect the interests of operators in the North Louisiana-South Arkansas territor yagainst claims made by the Erle P. Halliburton interests for alleged use of the Perkins process for cementing wells. Halliburton is licensee in the States of Arkansas, Louisiana, Oklahoma, Kansas and Texas for the "Perkins Patent" and has intimated that payment will be expected for all cases where this process has been used and also that back royalties from all wells in which production has resulted after the process was used will be expected. Inasmuch as the process has been in use in this area since 1908 a large number of operators are affected.

A committee, which will probably employ a patent attorney at Washington, has been appointed to investigate the case and it was stated by Secretary Elam: "We believe we will be able to protect the operators in this territory." The committee follows: C. M. Bennett, vice president of the Louisiana Oil Refining Corp; J. Y. Snyder, independent operator, and T. M. Milling, counsel for the Standard Oil Co. of Louisiana.

Smackover Completions

The outstanding item of interest in the entire North-Louisiana-South Arkansas territory during the past week was the performance of Page and associates' No. 1 Alphin, Section 23-16-15. The well was completed November 15 with an estimated production of 3,000 bbls., since which time it has run up to 15,000 bbls. and is by far the heaviest producer brought in throughout the entire area for several months. It was completed at 1,993 feet. Twelve other producers were completed in Union County with an aggregate new production of 23,630 bbls. One hole was abondoned at 160 feet at which depth the Acme Oil Co. left No. 1 Amazon, Section 8-17-14, with casing in hole.

Anderson and others completed No. 2 Berry, Section 8-16-15, pumping 200 bbls. from 2,015 feet.

Caldwell and others are swabbing 500 bbls. from No. 1 Murphy, Section 17-16-15, completed at 2,130 feet.

The Gladys Belle Oil Co. completed No. 1 Thompson, Section 7-16-15, pumping 90 bbls. from 2,055 feet.

Hollyfield and others completed No. 4 Giller, Section 11-16-15, pumping 400 bbls. from 2,000 feet. The Humble Oil & Refining Co. brought in No. 1 E. G. Murphy, Section 14-16-15, flowing 6,000 bbls. from 1,995 feet. The Humphries Oil Co. is swabbing 400 bbls. from No. 1 Massey, Section 17-16-15, completed at 2,060 feet.

King & Timberlake completed No. 1 Hodges, Section 1-16-17, flowing 10 bbls. from 2,270 feet.

The Magnolia Petroleum Co. completed No. 1 Neely, Section 1-16-17, flowing 20 bbls. from 2,295 feet.

The Oil Operator's Trust is pumping 60 bbls. from No. 3 Graves, Section 3-16-15, completed at 1,980 feet.

The Penguin Oil Co. is swabbing 600 bbls. from No. 3 Harrell, Section 17-16-15, completed at 2,115 feet.

The Sun Oil Co. completed No. 5 Hays, Section 3-16-15, pumping 200 bbls. from 1,980 feet.

Wells and others are pumping 150 bbls. from No. 1 Saxon, Section 4-16-16, completed at 2,615 feet.

Summary of drilling operations in the Union County area indicates a slight falling off in activity due principally to the fact that new operations did not equal the number of completions during the past week. The summary of operations was as follows: Waiting on standard rig, 19; temporarily abandoned, 14; drilling wells, 45; rigs, 7; derricks, 26; and locations, 3; a total of 97 active operations against 122 at the clost of the third week of the preceding month.

The Arkansas Natural Gas Co. has relocated a No. 6 Cullens in Section 4-19-15 and has derrick up. In Section 6-16-15, it is drilling plug in 4½-inch at 2,220 feet in No. 2 Ferguson.

Barnsdale & Foster are drilling at 2,120 feet in No. 3 Murphy, Section 17-16-15, with top of the sand they are in at 2,116 feet. Berfet and others are drilling in black shale at 2,600 feet in No. 1 Snyder, Section 2-19-15. Bondurant and others are fishing for bit at 1,150 feet in No. 1 Tuberville, Section 9-18-12. Browder and others are drilling in shale at 1,320 feet in No. 1 Burns, Section 17-16-15. Burton and others set 6-inch at 1,870 feet in No. 1 Smith, Section 19-16-15.

Chew and others are drilling plug in 6⅝-inch at 1,970 feet in No. 1 Harrell, Section 17-16-15. The Constantin Oil & Refining Co. is drilling in sand rock at 1,100 feet in No. 3 Hinson, Section 7-18-15. J. E. Crosby is waiting on standard rig for No. 1 Harrell, Section 17-16-15, with 18 feet of sand and the hole full of fluid, 40 per cent salt water, at 2,035 feet. Estes and others set surface 10-inch in No. 1 McGraw, Section 1-16-17.

Drilling Operations

The Federal Petroleum Co. is drilling plug in 6⅝-inch at 1,945 feet in No. 1 W. H. Murphy, Section 22-16-15. In Section 28-17-12 it is drilling at 2,960 feet in No. 2 Union Saw Mill. Garrett and others set 6⅝-inch at 2,070 feet in No. 1 Robinson, Section 23-18-14. The Gulf Refining Co. set surface 10-inch and is drilling in rock at 730 feet in No. 3 J. G. Murphy, Section 17-16-15.

Harrell and others are milling out bushing at 1,470 feet in No. 1 Tule, Section 11-19-12. The Higgins Oil & Refining Co. is rigging up to drill No. A-3 Murphy, Section 14-16-15. Hildreth and others plugged back to 2,266 feet from 2,298 feet in No. 1 Smith, Section 2-16-17. The Humble Oil & Refining Co. is waiting on standard rig at 2,015 feet in No. A-3 Giller, Section 15-16-15. In the same section it is rigging up to drill No. 3 E. G. Murphy; in Section 14-16-15, is building derrick for No. 4 E. G. Murphy and swabbing to test No. 2 E. G. Murphy at 2,000 feet. In Section 32-15-16, waiting on standard rig for No. 2 Saxon, at 2,270 feet. Hunt and others, in deepening No. 1 Primm, completed December 17, 1922, with 20,000,000 feet of gas are drilling plug in 4½-inch at 2,240 feet.

The Magnolia Petroleum Co. tested salt water after plugging back to 2,367 feet in No. 2 Campbell, Section 13-16-17 and has the hole wating orders. In Section 8-17-14 is drilling at 1,430 feet in shale in No. 5 Moody. The Murphy Trustees cemented 4½-inch at 2,310 feet in No. 2 Lawton, Section 17-16-15.

The Natural Gas & Petroleum Co., in deepening No. 1 Murphy, Section 17-16-15, tested dry at 2,290 feet and has 1,000 feet of salt water at 2,310 feet. Sam Richardson is rigging up to drill No. 1 E. G. Murphy, Section 23-16-15. The Roxana Petroleum Co. set surface 10-inch and has drilled to 600 feet in No. 4 Wells, Section 15-16-16.

The Standard Oil Co. has 6-inch stuck and is washing loose at 1,920 feet in No. 10 Alphin, Section 11-16-15. In Section 22-16-15, is drilling in rock at 170 feet, in No. 1 Lingelback, Section 22-16-15. In Section 5-16-16 is arranging to set liner with 18 feet of sand in No. C-1 Saxon, at 2,270 feet. The Sun Oil Co. set surface 12½-inch at 100 feet in No. 4 Hays, Section 3-16-15.

Tarver and others set surface 10-inch and drilled to 1,100 feet in No. 1 Childs, Section 8-16-16. The Texas Co. is bailing to test at 2,060 feet in No. 2 J. T. Murphy, Section 22-16-15, in which it has 35 feet of sand. The Tidal-Osage Oil Co. set 6⅝-inch at 2,005 feet in No. 2 Vestal, Section 17-16-15. Weatherbee and others are bailing to test at 2,260 feet in No. 1 O. A. Rice, Section 6-16-16, with 400 feet of oil in the hole.

Ouachita County Completions

Eight producers, with an aggregate of 1,370 bbls. of new production, were completed in the Ouachita County area of the Smackover district during the week. Bashara and others brought in No. 1 W. F. Patton, Section 31-15-16, flowing 220 bbls. from 2,255 feet. The Forest Oil Co. completed No. 5 J. A. Cramer, Section 27-15-16, pumping 125 bbls. from 2,295 feet; No. 3 Hardin, Section 28-15-16, flowing 25 bbls. from 2,265 feet; and No. 13 Mullins, Section 27-15-16, pumping 150 bbls. from 2,295 feet.

J. L. Hines brought in No. 1 fee, Section 30-15-16, flowing 250 bbls. from 2,280 feet.

Reynolds and others completed No. 1 Wells, Section 25-15-17, flowing 150 bbls from 2,300 feet.

The Smith Refining Co. completed No. 3 McRae, Section 30-15-16, flowing 200 bbls. from 2,270 feet and No. 4 Myer estate, in the same section, flowing 250 bbls. from the same depth.

New Development Work

Although a number of new operations are recorded in this area, the principal interest is maintained by the abundance of operations through deepening.

The Arkansas Natural Gas Co. is drilling in gumbo at 2,110 feet in No. 2 Patton, Section 31-15-16, and in Section 30-15-16, set surface 10-inch and is drilling in shale at 1,200 feet in No. 3 Patton. Bray-Hawthorne are shut down waiting orders at 2,000 feet in No. 1 Halford, Section 20-14-16. Burch-Walker set surface 10-inch and have drilled to 600 feet in No. 4 Patton, Section 31-15-16. Doctor Clark set surface 10-inch and has drilled to 2,100 feet where 6-inch was set in No. 1 Barry, Section 24-15-17.

The El Dorado Union Oil Co. set surface 10-inch in No. 1 Shirey, Section 31-15-16 and in Section 36-15-17, set surface 10-inch and has drilled to 700 feet in No. 2 Smith. The Forest Oil Co. is deepening No. 4 Hardin, Section 28-15-16, completed in April, 1923, with 150 bbls., and has reached 2,100 feet. In Section 27-15-16, it is arranging to deepen No. 11 Mullins, completed in June, 1923, at 2,000 feet.

Giles and others are rigging up to drill No. 2 Watte, Section 30-15-16. The Gulf Refining Co. is drilling in sandy shale at 2,650 feet in No. C-1 J. H. Dawson, Section 10-15-18. In Section 29-15-16 set 10-inch at 290 feet and is drilling in gumbo at 435 feet. In Section 32-15-16, set 6-inch at 2,205 feet in No. 1 Patton, and has derrick up for No. 2 Patton. In Section 31-15-16, set 10-inch at 185 feet and has drilled to 750 feet.

L. K. Hamilton is rigging up to drill No. 1 Patton, Section 31-15-16. The Houston Oil Co. set surface 10-inch and drilled 700 feet in No. 1 Patton, Section 31-15-16, and is drilling in shale at 1,350 feet in No. 2 Reynolds, Section 27-15-16. Hunt and others are drilling at 1,350 feet in No. 2 Solomon, Section 30-15-16.

The Invaders Oil Co. is waiting on standard rig for No. 4 Hardin, Section 28-15-16, completed May, 1923, with 26 bbls. at 2,060 feet. Ernest Johnson has rigged up and has No. 1 McElroy, Section 29-15-16 waiting, on orders. Keene & Woolf are drilling plug in 6-inch at

(Continued on Page 104)

Wire Line Has Advantage Over Sucker Rod

When Used With Varner Trip Socket

For pumping, many operators have preferred wire lines to sucker rods due to their lower cost and the advantage of having equipment that is in constant motion all in one piece and proof against parting.

One of the objections to wire lines for pumping has been that when valves sanded up and pulling became necessary, a great deal of trouble was experienced in releasing the line from the pumping outfit and in many cases it has been necessary to strip tubing over the line at cost of time, patience and usually damage to the line.

The patented VARNER TRIP SOCKET, controlled by us, has eliminated this objection, and thus gives wire lines a pronounced advantage over sucker rods. To the former advantages of lower initial cost and freedom from danger of parting is added **speedier changing of cups,** the tedious work of unscrewing sucker rods being avoided.

This device answers the purpose of any wire pumping line socket. A quarter turn engages the threads of upper and lower portions of socket, the steel springs snapping into depressions (see Fig. 1) and locking the two sections in position.

Fig. 1 Fig. 2 Fig. 3

Releasing sleeve screws onto under side of oil saver at casinghead where it remains until it is desired to disengage the line from the pump plunger. It is then dropped down the line, releasing the springs (see Fig. 2) and permitting a quarter turn of line to release it. (See Fig. 3).

This socket eliminates use of letting-go subs and jars, reducing danger of fishing jobs. Ask any WILLIAMSPORT distributor for full particulars.

Fully patented, with manufacturing and sales rights controlled by the

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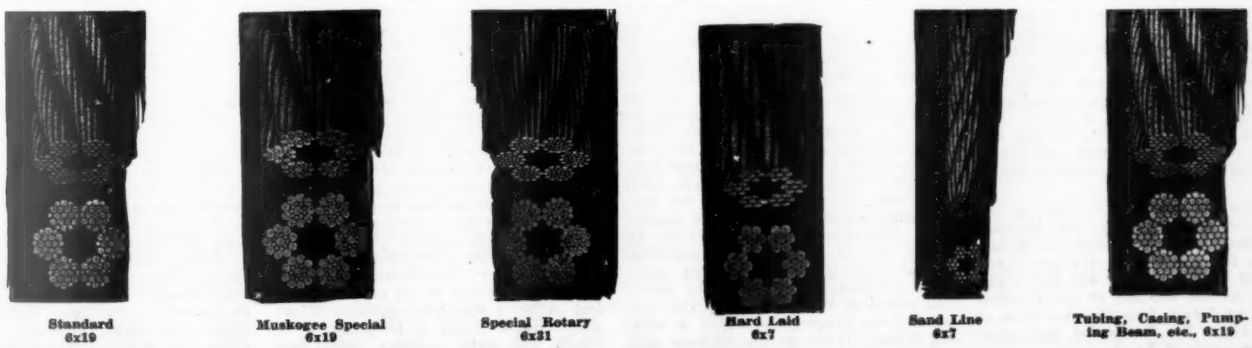


Standard 6x19 | **Muskogee Special 6x19** | **Special Rotary 6x31** | **Hard Laid 6x7** | **Sand Line 6x7** | **Tubing, Casing, Pumping Beam, etc., 6x19**

West Kentucky-Tennessee

By Very T. Whitney

Turner & English's No. 1 Railey, Monroe County, Kentucky, makes 75 bbls. No. 2 C. Smith, Warren County, shows 50 bbls. flush. Martsolf Fuel Products Co.'s No. 2 Mel Reeves, good for 15 bbls. Makeever Bros. plan extension of Sandidge. Dusters only from Tennessee. Riverside, Ky., test.

BOWLING GREEN, Ky., Nov. 26.—A summary of the week's work in the western Kentucky Field shows 12 completions, with a flush of 91 bbls., from six producers and six dry holes. Compared with the previous week this is a decrease of 13 completions, nine producers and four dusters. A decrease of 159 bbls. is noted in the production. In Tennessee, three wildcat tests were finished dry.

The feature of the week was the changing hands of a large amount of wildcat acreage in Monroe and Cumberland counties, Kentucky and Clay County, Tennessee. In Monroe County, contracts have been let for the drilling of four new holes in the vicinity of the Railey Pool, 5 miles west of Tompkinsville, due to the excellent showing in No. 1 Railey, being drilled by Turner & English. At 740 feet this well showed for about 35 bbls., but drilling deeper, in the sand, it shows for at least 75 bbls. initial production. The four new wells will be drilled by H. A. Kiser, Watterson & Co., Turner & English and C. P. Tanneyhill. In Cumberland County, several new wells will be spudded in the vicinity of the Sam Riddle well, recently completed by E. M. Treat & Co., and contracts have been let for two new wells in the Sulphur Creek District.

From all appearances the coming season will see a very large amount of development work done in these southern Kentucky counties, as well as in Clay, Pickett, Overton, Fentress and other northern Tennessee counties.

Warren County Development

The best completion in Warren County was the No. 2 G. Smith, adjoining the Price-Hall lease, in the new Gillespie-Price Pool, west of Rockfield. It is estimated at 50 bbls. flush and will make about 30 bbls. on the third pumping. Two sands were encountered first, from 1,107 to 1,114 feet, and the second from 1,153 to 1,174 feet, the bottom of the hole. On drilling in the well filled up to the extent of 600 feet the first hour and a half, and the next morning considerable oil was swabbed before it was given a shot of 80 quarts. This well is considered one of the best so far drilled in this pool, which it extends several locations to the west. No. 1 on this property, drilled early in 1920, was a big gasser. In this district the Ruby Consolidated Oil Co. is moving a rig to drill No. 3 Price-Hall, an offset to No. 1 on the Ben Price. The Gillespie Oil Corp. is down 700 feet in No. 4 Gillespie. C. L. Turner is making hole at 467 feet on the McLemore farm. Bowling and associates are spudding No. 3 Price. The Jackson Oil Co. is drilling at 568 feet in No. 4 Jim Jones. Wile and others staked off No. 3 location on the G. Smith farm.

In the Reeves district, west of the northeast extension area, the Martsolf Fuel Products Co. finished No. 2 Mel Reeves for 15 bbls. at 474 feet. Top of sand was struck at 466 feet. The well is located 300 feet of No. 1, which is making 5 bbls. from the deep sand at 1,148 feet. No. 3 location was made 350 feet south of No. 2.

Makeever Bros. discoverers of the famous Sandridge shallow pool, northwest of Bowling Green, spudded in No. 3 well on the Higginbotham farm consisting of 211 acres. It is 3,000 feet west of No. 2 and will show a nice extension if a producer. Makeever Bros. have been very successful in this district having drilled in the neighborhood of 40 wells, all of which are on power.

Across Barren River from the Sandidge farm, G. C. Foster and associates of Dayton, Ohio, have what looks like a good producer in No. 3 Dr. C. E. Francis at around 550 feet. It is now waiting for a shot of nitro. Bannon & Stewart's No. 3 Shields is down 267 feet; G. W. Pyle's No. 1 Watkins is drilling at 879 feet; F. E. Evans' No. 1 Arch McGinnis, 1½ miles east of the Francis, is making hole at 432 feet, while No. 1 Montague of Reed and associates is ready for casing.

In the northeast extension area, the Ohio Fuel Oil Co., is making hole at 340 feet in No. 14 W. A. Gott 100 acres. On the Gott 75 acres, the Plantation Consolidated Oil Co.'s Nos. 9 and 10 are due in the last of the coming week. E. M. Treat & Co. is drilling No. 15 Sebe Smith at 430 feet. No. 16 is spudding. The Wood River Oil Corp. is still shut down at 50 feet on the R. Oliver farm. To the east of the above district, J. J. Fort is on top of the shallow pay on the Wick White tract.

A great deal of interest is being shown in the wildcat test of Cunningham and associates on the Elkins farm, 15 miles northwest of Bowling Green, near Riverside. It is now down 500 feet and the shallow sand will be struck, it is thought, at around 800 feet.

Pipe Line Nearing Completions

The Indian Pipe Line Corp.'s trunk line from Bowling Green to Owensboro is now completed as far as Hartford, in Ohio County, a distance of 46 miles, leaving but 18 miles left to lay. From Bowling Green to Scottsville the line has been finished a distance of 12 miles leaving 13 miles still to be completed. In all probability oil will be run through the line by December 15.

Allen County Wells

Allen County had a very disappointing week, showing but one 2-bbl. well out of five completions, the balance being dry. It was No. 12 Ayers, in the Satterfield Pool, of H. A. Kiser and was finished at 375 feet. A wildcat on the T. C. Tinsley, 1 mile northwest of Scottsville, one the Bowling Green pike is reported a duster at 362 feet.

An attempt to extend the famous Mitchell Pool to the west resulted in three dry holes, on the Meador, Lyles and Guy farms. The Mitchell 27 acres has produced to date over 150,000 bbls. of crude. During October it made 2,900 bbls. from 11 pumping wells, the first of which was finished about 18 months ago. The Dyson property, of J. C. Sibley, Jr., of Franklin, Pa., adjoining the Mitchell, is holding in good shape as is the Lewis lease, owned by Mealy and others of West Virginia. The Carpenter-Dent property adjoining is making 8 bbls. It was purchased some time ago, from Lowman Bros. by the Plantation Consolidated Co.

At the present writing 16 wells are going down in Allen County, while only a few new locations have been made.

Owensboro District

The past week furnished two completions in the Daviess-Ohio-Hancock County oil field. The Newton Oil Co., on the Bickett farm in the Hurricane section finished up a well in the shallow sand at a depth of 420 feet, which it is estimated will make a 4-bbl. pumper. In the territory southeast of Pellville, the Indian Hill Oil Co. has what looks to be a 10-bbl. pumper in the Barlow sand, which finished up at 750 feet with 14 feet of pay sand. Both wells will be given a treat of nitro.

While there were only two completions for the week a number of wells are drilling and during the next 10 days there will be several wells in the sand. The Kentucky Oil Co. on the Widow Chambers farm is down 200 feet on its first venture on this lease. C. E. Daugherty & Co. are rigging up on the Charles Payne farm at Habit school house, while the Panther Creek Oil Co. is preparing to move a rig to No. 4 location on the Bob Miller, offsetting the shallow well on the Virgil Miller farm.

On Amanda Stewart Lease

C. A. Leeper is down 239 feet on the Bailey farm west of the famous Amanda Stewart lease. In the Hurricane section the Wood Oil Co. on the Ellen Howard, at Aetnaville, missed the Jett sand at 400 feet and will continue drilling to the Barlow formation.

The Chicago Petroleum Syndicate, which recently recovered from a severe fishing job on the Taylor farm at Maceo, has resumed drilling and at 1,150 feet encountered salt water. The rig is now shut down awaiting instructions, as casing was set at about 1,000 feet.

After drilling three dry holes in McLean County, near Beech Grove, the Petroleum Extraction Co., New London, Conn., has moved to the Wheeler farm, about 5 miles from Beech Grove, and will make another test. The rig is now on the location and drilling will be started in a few days. This company's latest duster was No. 1 on the G. Cline farm at a total depth of around 1,200 feet.

Cumberland County

Now that the pipe line is completed in the Cumberland County field operators are getting busy pumping their wells and their lasting qualities will soon be known. A statement the other day by a reputable pipe line man was that he expected that from 22 wells, 96 bbls. per day from each would be forthcoming, meaning flush production. The Paragon line will take care of about 1,500 bbls. per day and as there is in the neighborhood of 35,000 bbls. of oil in tankage on different leases, which must be run before a regular test can be given, it will be at least 90 days before their staying qualities are known.

Drilling Activities

Bear Creek: The Paragon Development Co. is setting 6-inch casing at 800 feet in No. 1 Spear, offset to the Treat well. E. M. Treat & Co.'s No. 1 P. Smith will start spudding within the next 10 days. It has been reported that No. 1 Sam Riddle went on water for several days, and late reports state it is now back on oil and, since last Sunday has made 500 bbls. Martsolf Fuel Products Co. is still rigging for No. 2 Sam Bruton. Douglass St. Clair is drilling at 100 feet on the Victoria King lease. If a producer it will possibly mean the linking of the Bear and Sulphur Creek pools.

Sulphur Creek: W. S. Raydure's No. 2 G. W. Coop has been shut down for several days on account of heavy gas at 280 feet. At 135 feet the well showed for 2 bbls. of amber oil. The Kanawha Oil Co. moved its rig from the F. Williams farm to location on the G. Williams, ½ mile further down the branch. Hook, Ross & Wise are making hole at 100 feet in No. 2 Sam Riddle. The Huddleston property has been divided between the Morris Petroleum Co. and the Combest Oil Corp., the latter concern getting 210 acres and the former 175 acres with one well making 500 bbls. when opened. It was completed March 17 at 89 feet below the Pencil cave. No. 2 location has been staked off. The Combest Co., under the leadership of Col. Less Combest, has three producing wells, in the sand below the cave that are excellent pumpers. Heckethorn Bros. of Oil City, Pa., are drilling Nos. 4 and 5 for the Combest.

At Kettle Creek, the Paragon started running oil the first of the week through its recently completed lines which will be a great benefit to operators whose storage is filled. It will also cause a number of old locations to be drilled. The South-Kentucky Oil Co.'s No. 1 L. S. Blythe is good for 3 bbls., naturally, in the second Sunnybrook. It will be drilled deeper to the Cave sand. Young Oil Co. is drilling No. 2 J. R. Poindexter at 300 feet. Bushaw and others are down 200 feet on the Turn Smith lease. No. 1, on which a 60-horse power compressor was recently put to exhaust water, is making 1 bbl. of oil for each 18 bbls. of water. It is being pumped through two 2-inch lines. The Atlantic Oil Producing Co. is fishing for casing on the Dowell well. W. S. Raydure's No. 1 Sam Smith is plugging away at 750 feet; Lynch & Co., are spudding No. 1 on the C. Scott farm, on the Blythe Branch. Bonnell, Sloan & Zook's No. 1 L. C. Blythe is down 309 feet.

At Judio Creek, the Judio Development Co. is setting casing at 400 feet on the J. B. Hume No. 3 well.

At Marrowbone Creek, Douglass St. Clair's No. 1 Ethel Baker is drilling at 250 feet. At Renox Creek, the Shady Side Oil Co.'s No. 1 Strange is in a gas sand at 200 feet.

Monroe County

Very little of interest outside of the changing of several blocks of acreage is reported in the Monroe County district. Eight wells are now making hole and several should be on the completion list next week. At Cloyds Landing, in the eastern part of the county, Whitman and associates got a duster at around 600 feet on the Murphy farm.

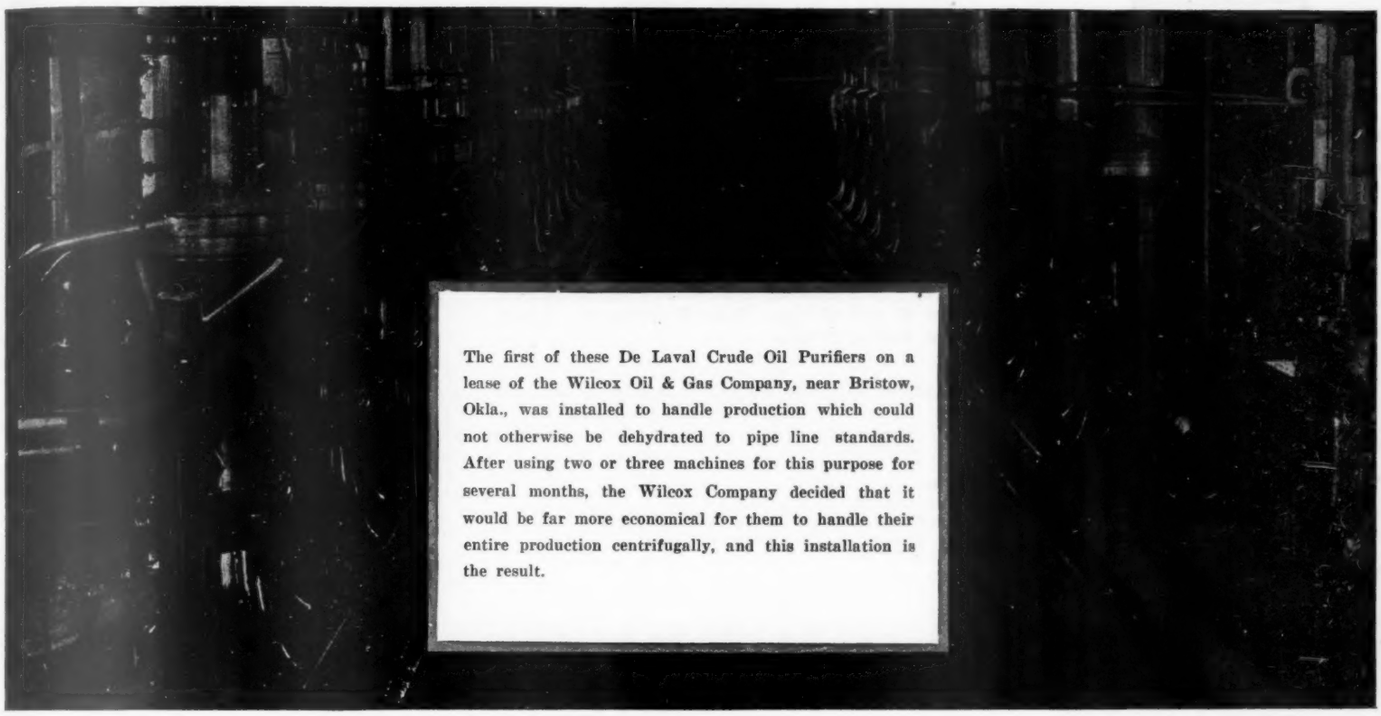
In Barren County, Shriver & Co.'s No. 1 Jordan, near Oil City is good for 10 bbls. of oil and 15,000 feet of gas. No. 2 is spudding.

Tennessee News

The No. 3 Stribling, 2 miles north of Lawrenceburg, Tenn., in Lawrence County, is dry at 2,155 feet. This test was watched very closely by scouts of the major companies and was quite a disappointment. No. 4 location is made.

Near McMinnville, in Warren County, the No. 1 Foster of the Kentucky-Tennessee Oil & Gas Syndicate was abandoned at 750 feet. Quite a number of gas sands were encountered that showed large gas pressure which died out quickly.

In Clay County, Peters & Co.'s No. 1 E. Morrow is dry at 801 feet. Pencil Cave was found at 704 feet. The well was 1,200 feet from No. 2 Arch Short of the Powell Oil Co. Nine wells are drilling in this county at widely separated points. It is also reported that several locations were made in both Overton and Pickett counties.



The first of these De Laval Crude Oil Purifiers on a lease of the Wilcox Oil & Gas Company, near Bristow, Okla., was installed to handle production which could not otherwise be dehydrated to pipe line standards. After using two or three machines for this purpose for several months, the Wilcox Company decided that it would be far more economical for them to handle their entire production centrifugally, and this installation is the result.

End winter b.s. trouble with De Laval Crude Oil Purifiers

Right now, when cold weather is coming on the installation of De Laval Crude Oil Purifiers on leases having wells making emulsion, or b. s., is more economical than ever.

With the steaming and settling method, losses of oil in b. s. are always highest in winter and on some leases even partial purification cannot be accomplished by this means. Centrifugal purification is practically immune to outdoor temperature changes and, therefore, makes it possible to keep losses at the same low level in either the winter or summer months.

De Laval Crude Oil Purifiers have stopped cold weather b. s. troubles on many leases. What is more important, though, is the fact that they have added to their year-around earnings at the same time.

Besides making it possible to put oil into the pipe lines which could not be sold otherwise, De Lavals often make it possible to obtain a better price for your production. This is due to the fact that where they are used oil is not heated to such a high temperature nor kept hot for anywhere near the length of time as with the steaming and settling process. Therefore, there is much less loss of both gravity and volume by evaporation.

A fact overlooked by many producers of crude oil is that when prices are lowest the need for an efficient treating method is greatest. When there is a wide margin of profit between the cost of producing a barrel of crude and the price at which it is sold, the loss of a few barrels a day is easily absorbed. But as the margin of profit becomes smaller, such a waste is sufficient to change a profitable lease into one which can be operated only at a loss.

If you are having b. s. trouble now install De Laval Crude Oil Purifiers before it gets worse.

Mail the coupon for Bulletin No. 104 which tells all about them.

The De Laval Separator Company
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165 Broadway, New York
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We would like to know how we can treat our production to stop the accumulation of b.s. and how we can, perhaps, reclaim enough crude from our b.s. pond to pay for installing De Laval Crude Oil Purifiers.

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Fields of the Central West

By Whit

American Oil Co.'s well, Jackson Township, Knox County, Ohio, good for 100 bbls. Union Gas & Oil Co.'s No. 24 P. P. Holbrook and No. 10 Proctor Sparks, North Weir, Kentucky, good for 80 and 60 bbls. Ross Wetzel's No. 5 Bell Heirs, Wayne County, Kentucky, makes 75 bbls.

FINDLAY, Ohio, Nov. 26.—One of the active weeks of the year with a large number of completions is reported, with the Central Ohio Field in the lead.

The feature of the week in the Central West comes from Floyd County, Kentucky, where a well drilling by the Swiss Oil Corp., makes an excellent showing at a depth of around 2,800 feet, and is really the deepest oil pay sand well in the State at this time.

Wood County

In the Prairie Depot Field of Montgomery Township, Wood County, H. Kinzey's No. 4 on the northeast corner of the O. A. Diver, Section 15, is credited as a 10-bbl. pumper at 1,283 feet. In Plain Township, the Allen Oil Co.'s No. 2 Roe heirs, Section 28, pumped 10 bbls. at 1,334 feet. R. C. Shuler and others' No. 4 W. C. Blystone, Section 35, will make a small pumper, with a dose of salt water and No. 5 is drilling. Hulse and Koontz are preparing to start No. 2 H. Goodenough, Section 34. The Ohio Oil Co., abandoned wells Nos. 1, 2, 6, 7, 8, 10 and 11 Albert Avery, Section 22, and No. 8 S. L. Mitchell, Section 35.

In Henry Township, Wood County, the Ohio Oil Co. has a heavy dose of salt water at its No. 66 on the Lawrence Cable farm, Section 3 at 1,540 feet. In Bloom Township, the same company's No. 19 on the J. A. Moyer, Section 6, is reported dry, and No. 47 on the Northwestern Ohio Natural Gas Co. farm, Section 29, is drilling. In Liberty Township, the Ohio Oil Co. has abandoned Nos. 1, 2, 4 and 6 Cynthia Knaggs, Section 1; Nos. 1 and 5 George Powell, Section 2 and No. 15 on the Dan Mercer 143 acres farm, Section 23. In Middleton Township, the Five Points Oil Co. is drilling No. 6 W. E. Bruce, Section 20. In Troy Township, the Troy Oil and Gas Co.'s No. 10 Herman Linke, Section 13, is a dry hole and was drilled in between what were in their day good producers. The Northwestern Ohio Natural Gas Co., is drilling a test on the S. F. and F. Metzger, Section 29, Center Township, Wood County. In Lake Township, W. F. Johnson is drilling No. 6 D. Lahy, Section 34.

In Eagle Township, Hancock County, Porter & Hovis drilled in a 30-bbl. flush well in No. 9 Lem Aurand, Section 5, while No. 10 same farm, pumped 25 bbls. and Nos. 11 and 12 are drilling. B. Porter and others' No. 1 on the northeast corner of the J. McClelland, Section 5, pumped 12 bbls. In Union Township, same county, the Beatty-Nickle Oil Co.'s No. 13 P. J. Heldman, Section 25, pumped 10 bbls., and Harpst Bros. are drilling No. 9 Henry Schwinn, Section 1.

Hancock and Allen

In Liberty Township, Hancock County, A. N. Bryson and others' test on the J. E. Wagner, Section 21, and Spoon and others' No. 1 E. E. Spoon, Section 14, were both dry holes, and the Ohio Oil Co. abandoned No. 20 S. W. Marvin, Section 1. In Cass Township, the same company pulled out wells Nos. 16 and 18 J. E. Hudson, Section 15 and No. 14 Jacob Stecker, Section 35, while it did the same with Nos. 5 and 6 on the B. Bare, Section 36. Allen Township, same county. In this township, the Overholt Oil Co., is drilling No. 2 Hy Overholt, Section 7.

In Bath Township, Allen County, the Ohio Oil Co. abandoned Nos. 1, 3, 4, 5, 6, 9, 11, 12, 13, 14, 15 and 16 T. S. Hauthorn, Section 22, and Nos. 2, 5, 6 and 7 Elizabeth Gray, Section 27. In Spencer Township, the Ohio Oil Co. is drilling No. 7 Bailey & Morey, Section 1, and the South Fork Oil Co. is drilling a test on the Ed Reynolds, Section 27. In Marion Township, the Federal Oil Co. is drilling No. 2 Fred Miller and No. 3 Ed Youngpeter, both in Section 11, and has abandoned No. 1 on the John Lucius, Section 10.

In Douchouquet Township, Auglaize County, R. S. Cheuvront abandoned Nos. 1 and 2 Meckling & Co., Section 36, and is drilling No. 4 same farm. In Noble Township, the Bend Oil and Gas Co. is drilling No. 3 W. Thomas, Section 31.

In Woodville Township, Sandusky County, D. Molgard and others pulled out their Nos. 1 and 2 J. A. Recker, Section 21. In Scott Township, the Adams Oil and Gas Co., is drilling No. 4 P. Willey, Section 36, and in Jackson Township, F. Rollins is drilling No. 1 on his own farm, Section 11.

In Union Township, Mercer County, Stelzer & McClure abandoned old No. 1 Summer & Drake farm, Section 9. In Granville Township, E. G. Henderson and others' No. 1 on the southeast corner of the E. Remmell, Section 19, pumped 15 bbls. H. G. Neely and others are drilling No. 1 J. Schelser, Section 1,9 and H. J. Thompson and others are drilling No. 2 B. Post, Section 30.

In Jefferson Township, Mercer County, the June Oil Co.'s No. 1 J. Downey, Section 33, came in at 10 bbls., purely a wildcat, extending the producing area for a long distance. In Gibson Township, A. J. Wiedeman and others' test on the Peter Waurins, Section 25, pumped but 1 bbls., while A. W. Neely and others' test on the southeast corner of the J. C. Myers, Section 23, was dry.

Van Wert County

In Willshire Township, Van Wert County, the Ohio Oil Co. abandoned Nos. 2, 3, 4, 6 and 8, William Buchner, Section 25. J. W. McCray, did the same with No. 1 T. C. Maddox, Section 36. N. T. Kuhns and others pulled out Nos. 3, 4 and 5, J. B. Eaton, and No. 1 Ernest Detrick, Section 26. In Jennings Township, this firm also abandoned No. 7 Lewis Mack, Section 8, while the Stanley Oil Co. is drilling a test on the Amos Barnett, Section 28.

In Oregon Township, Lucas County, the Andrews Oil Co. abandoned No. 2 James Jacobs, Section 31, and No. 2 Mary T. Friend, Section 6.

In Harrison Township, Ottawa County, the Zorn-Hornung Co.'s No. 6 William Scott, Section 20, pumped 7 bbls. and No. 7 is drilling. The Scott Oil Co.'s No. 1 E. Sarnes, Section 21, pumped 6 bbls. at 1,324 feet. The Bristoe Oil & Gas Co. is drilling a test on the John Bristoe farm, Section 12. In Allen Township, John Weber abandoned No. 2 Lottie Shessler, Section 11, and No. 3 Maria Bringe, same section, and Mountler Bros. did the same with Nos. 5 and 7 Robert Joehlin, Section 31.

In Jackson Township, Darke County, the Carter Oil Co., drilled a wildcat well on the southwest corner of the J. Walls farm, and while it did but 2 bbls., shows that something better may be found in the immediate vicinity. In Mississinewa Township, same county, E. G. and James Henderson's test on the northwest corner of the J. Staghler, Section 2, pumped 5 bbls.

Central Ahio

The new gas pools along the Richland-Huron County line, in the vicinity of Shiloh and in the north end of Richland County, is one of the most attractive spots in the north end of the Central Ohio Field at this time. The gas is found at a comparatively shalow depth, around 1,100 feet, and in the Niagara limestone formation.

The gas wells show a volume flush of from 250,000 to 3,000,000 feet. The only well reaching the high volume, was Hulse & Koontz' well on the Dan Miller farm, Section 1, Cass Township, Richland County, although several of the wells have come mighty close to showing that volume. This firm also drilled in a 1,000,000-foot well on the Nugent, same section, and now drilling No. 1 Myers farm, same section.

In Cass Township, Richland County, George Van Tilburg drilled in what is estimated a volume of 2,000,000 feet in his No. 1 Sarah Seeman, Section 2, and is drilling No. 1 Porter, Section 1. Ben Hart drilled No. 1 Maringue, Section 1, that shows for 450,000 feet. Charles E. Ozier, one of the active developers of the new field, drilled in the following new wells: No. 3 Wattman, Section 1, estimated at 640,000 feet; No. 3 Sam Seeman, same section, 1,000,000 feet, No. 2 same farm, 500,000 feet; No. 4 estimated at 2,000,000 feet and No. 5 same farm, at 500,000 feet.

Drilling Operations

The new drilling wells in Cass Township, Richland County are: O. J. Davidson's No. 1 Steele & McBride, Section 26 Brown, Havlin & Warren's No. 2 D. Guthrie, Section 13; J. Wilts' No. 1 A. F. Kinsel, Section 13; Mitchart & Noah's No. 1 Boyd Hammon, Section 13; Bert Hancock & Co.'s No. 1 A. Nelson, Section 13; Moore & Wright's No. 2 W. S. Champion, Section 12; Coyle & Matthews' No. 3 Niffen, Section 1; Cupples & Ozier's No. 1 Barnes, Section 2; Smith & Wiedman's No. 1 D. Malone,

(Continued on Page 94)

Kansas Oil Field News

By C. D. Lockwood

The only news from the Kansas fields worthy of mention during the past week was from Cowley County, where the Waite Phillips Co. and the Independent Oil & Gas Co. helped their No. 1 Johnson, NW cor. SE, Section 20-33-3e, by drilling it 4 feet deeper, and it was flowing by heads at the rate of 250 bbls. daily from sand at 3,199 to 3,204 feet. The oil tests 42 gravity and will be taken by the Kanotex Oil & Refining Co. of Arkansas City. The bit is still in the sand and this well gives promise of opening up a new field. It is located 3 miles north of Geuda Springs, and northwest of Arkansas City.

Another wildcat that has created some interest is the M. M. Valerius Oil Co.'s well, (carried by some companies as Liggett and others) in the SE cor. SW, Section 8-12-15w, Russell County, which was drilling in lime at 2,860 feet, with enough gas to spray about 10 bbls. of oil from sand at 2,795-2,802 feet. It had previously had a show of oil from sand at 2,520 feet.

The activities in the Kansas fields showed a further slump of 9 operations during the week ended November 17, the total number amounting to 221 in comparison with 230 for the week before. The later figures include 31 locations, 55 rigs, 50 wells drilling and 85 wells shut down, while for the week ended November 10 there were 36 locations, 54 rigs, 55 wells drilling and 85 wells shut down. This is a loss of 5 locations and 5 drilling wells, with a gain of 1 rig, the number of shut down wells remaining the same.

Cowley County

In Cowley County, Waite Phillips' No. 1 Wilson, NE cor. Lot 22, Section 19-34-8, was a failure at 2,880 feet. The S. S. Oil Co. was drilling No. 1 Newton, NE cor. SW NE, Section 15-30-4e below 400 feet. Sutter & Stearns, were drilling at 875 feet in their No. 1 Maganunson, NW cor. NE SE, Section 15-30-4e. The Twin State Oil Co.'s No. 1 Hilbert, SE cor. NW, Section 6-32-5e, was drilling below 1,600 feet. The Southwestern Petroleum Co. was also drilling its No. 1 Shildes, SE cor. NW, Section 18-32-6e, at 1,850 feet.

In Butler County, the Ramsey Petroleum Co.'s No. 1 Hay, SW cor. Section 16-23-6, was drilling at 200 feet. The Titus Oil Co. was drilling its No. 1 Eastman, NE cor. SE NE, Section 32-26-6, at 1,200 feet.

The Hepworth Oil Co. was spudding in a wildcat, No. 1 Matti Brothers, NE cor. NW, Section 33-19-9, Chase County.

The rank wildcat tests were failures. The Wizard Oil Co. abandoned its No. 1, C SW NW, Section 34-18-1w, McPherson County, at 3,050 feet; the Dillard Bros.' No. 1 Miller, C NE NE SE, Section 9-33-1e, Sumner County, was dry at 3,502 feet, and Haynes and others' No. 1 Eggy, SW cor. Section 20-26-7w, Reno County, was abandoned at 210 feet.

Harvey County

In Harvey County, the Newton Oil Corp. was spudding No. 3 Westchensky, SE cor. SW NE, Section 4-32-2, and Mason and others' No. 1 Conway, NW cor. SE, same section, was also being spudded in. Shawver & Sutter had a rig on the ground for No. 1 Kiehbeil, SW cor. NW, Section 3-23-2e.

Frank Wahn was moving in timbers for his No. 1 Brown, SE cor. Section 33-22-2e. Mason and others made a location for No. 1 Hawk, NW cor. Section 4-23-2e. The Derby Oil Co. had timbers for No. 1 Brandewerde, SE cor. NW NE, Section 4-23-2e.

In Sumner County, the S. H. E. Oil Co. found a show of oil at 2,835-40 feet in its No. 1 Stout SE, cor. NE, Section 13-31-2e, and was carrying a hole full of water at 2,904 feet. Spencer and others' No. 1 Judd, NW cor. Section 34-33-2e, was abandoned with a hole full of water at 3,790 feet.

In Lyon County, the Super Six Oil Co.'s No. 1 Shrader, NW cor. SW, Section 13-21-10, was shut down at 2,182 feet.

In Marion County, the Kansas Oil Corp. was spudding No. 4 Speir, NW

(Continued on Page 90)

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

The truth, the whole truth, and nothing but the truth

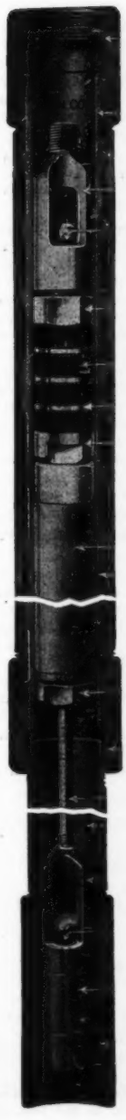
Out at Whittier, California, the Colorado Oil Company has been producing for many years. Read this letter of remarkable tribute to Axelson Pumps:

Whittier, Calif.,
Nov. 7, 1923

Axelson Machine Co.,
Los Angeles, Calif.,
Gentlemen:

Herein is what appears to us interesting data. Our well No. 5-A on the old Turner Lease was pulled and a new Axelson Barrel was inserted on October 2, 1917. The well has pumped **continuously** until November 3, 1923, when it was pulled to replace cut seats. The plunger still showed the grinder marks all over with the exception of about 1½ inches on the top end, and with the renewal of seats pumps as satisfactorily as ever. Depth of well, 1682 feet. That certainly is service in the pump line.

Very truly yours,
(Signed) COLORADO OIL CO.,
By A. S. Talbert, Supt.



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Axelson Products carried in stock and distributed in the Mid-Continent Field by Frick-Reid Supply Company

Gulf Coast Oil Operations

By P. L. McGreal

Possible extension of the Orange Pool southeast and of the Luling Field half mile northeast. New light gravity sand in Mirando-Schott district extended nearly mile southwest. South Texas Co.'s No. 2 Cox, Live Oak County reported making 300 bbls. by heads.

HOUSTON, Texas, Nov. 24.—The Sun Oil Co.'s No. 2 Brown in the Orange Pool is flowing 3,500 bbls. through chokers. It extends the pool over one-half mile to the southeast.

In the Luling Field, the United North and South Oil Co.'s No. 5 Mercer is flowing 1,500 bbls. and No. 3 Hardeman 2,000 bbls. Both are in the old section of the field.

The extension of the Orange Pool by the Sun Oil Co. well and an extension of the Luling Field, one-half mile northeast are the outstanding features of the Gulf Coast region and the southwest districts during the week. Added to these is the discovery that the new light gravity sand in the Mirando City-Schott district in Webb County was extended nearly 1 mile southwest from the original wells at 1,940 feet. The Laurel Oil Co. there has a well making 45 gravity oil at 2,000 feet, or a dip of approximately 60 feet from the first wells.

Credit balance quotations remain unchanged, although rumors of premiums of 25 cents per bbl. being paid by outside refiners for Gulf Coast crude are rife. These, however, cannot be substantiated after careful inquiry but they serve to create a more hopeful feeling among the independent operators and royalty owners. The latter constitute a very large fraction of those interested in the industry in south Texas. In fact royalty owners are more numerous than operators in the pools. Many of these have over-riding royalties, scalping the difference between the one-eighth retained by the land owner and whatever is paid by the operating company or individual.

Estimated Gross Production

The estimated daily average gross production for the week in the Coastal pools, the southwest districts and the Milam County shallow sand section, is placed at 94,898 bbls., compared with an estimate of 95,930 bbls. last week, or a decrease of 1,032 bbls. The estimate for the Coastal heavy gravity pools alone is 88,338 bbls., representing a loss of 862 bbls. The estimate for the Luling Field is 8,800 bbls., which is not included in the total.

The estimate for each district is as follows:

District—	Bbls.
Batson	1,110
Blue Ridge	725
Barber Hill	340
Dayton	60
Damon Mound	1,850
Edgerly	418
Goose Creek	13,250
Humble	5,505
Hull	20,985
Jennings	720
Markham	105
Orange	14,270
Pierce Junction	625
Spindletop	815
Saratoga	1,785
Sour Lake	5,010
Somerset and Piedras Pintas	3 040
Vinton	5,815
West Columbia	14,150
Miscellaneous	3 620
Total	94,898

Coastal Operations

In addition to the test of the Sun Oil Co. mentioned in the Orange Pool that company is deepening No. 1 Kato on the northeast side at 3,550 feet. The Orange Petroleum Co. worked over No. 5 Chesson at 3,600 feet and it started pumping 515 bbls. initially, but at the close of the week was making 350 bbls. on the jack. The same company is now working over No.4 Chesson and No. 8 Winifree. The Mutual Oil Co. (Standard Oil of Indiana) is bailing No. 8 Chesson at 4,250 feet after working it over and is drilling No. 6 at 3,345 feet. The Supreme Oil Co.'s No. 1 Jackson is deepening at 4,375 feet. The Rycade Oil Co. (Amerada Petroleum Corp.) is below 4,200 feet in No. 3 State land. The Atlantic Oil Producing Co. is bailing No. 2 Hager at 3,575 feet. The American National Oil Co.'s No. 1 Winifree, 1 mile northeast of production, is deepening at 3,624 feet. It showed salt water at 3,450 feet. The Gulf Production Co. has resumed work in the pool, drilling No. 13 and No. 14 Hager Fee, east of Cow Bayou, at 2,923 and 876 feet respectively. Its No. 4 Chesson is deepening at 3,600 feet and No. 3 Pevetio is rigging. A location has been made for No. 6-A Kishi-Lang on the northwest side. Last year the company drilled No. 4 Kishi-Lang to below 5,200 feet and quit.

The Hull Pool furnished a couple of pumpers, on the north and on the east sides of the dome. The Republic Production Co.'s No. 41 Dolbear on the east side is rated at 200 bbls. at 3,575 feet after being deepened. Its No. 59 is deepening below 3,700 feet. No. 73 Dolbear is drilling at 1,876 feet, with No. 72 rigging to start and No. 74 a derrick. The Gulf Production Co.'s No. 10 Phoenix on the southeast is rigging to drill deeper, while No. 5 Harrison Fee on the northwest side, is drilling at 2,465 feet. The Yount-Lee Oil Co.'s No. 5 Stengler on the north side is making 200 bbls. on the jack at 3,250 feet. The company is rigging to work over No. 8 Merchant and is drilling No. 2 Taylor Fee on the northwest, at 2,870 feet with a location for No. 4. The Houston Production Co.'s No. 7 Taylor is below 675 feet. The Mecom Oil Co.'s No. 3 Mecom is deepening at 3,480 feet. The Humble Oil & Refining Co. has locations for No. 1 Sterling and No. 2 Taylor. The Link Oil Co.'s No. 4 Rivere is deepening at 3,345 feet. The Higgins Oil & Fuel Co.'s No. 1 Merchant is below 2,876 feet. The Monarch Oil & Refining Co.'s No. 2 Miller is sidetracking and No. 3 Miller is doing the same, while No. 7 Abel has been abandoned at 1,325 feet. On the south side of the hill the Sun Oil Co.'s o. 9 Carr is deepening at 1,590 feet and to the southwest, The Texas Co. and Vacuum Oil Co.'s joint No. 1 Hannah is sidetracking at 2,740 feet.

Goose Creek

In the Goose Creek Pool, the Humble Oil & Refining Co.'s No. 52 Smith is pumping 135 bbls. at 2,550 feet. A derrick is standing for No. 53. No. 10 Tabb is at 3,670 feet. No. 26 Galliard peninsula is a deep test, drilling below 4,550 feet. At the mouth of the creek, the Gulf Production Co.'s No. 6 Chapman-Bryan is drilling below 4,400 feet and No. 2 Hirsch in the bay is rigging. The Gulf Coast and Crown joint No. 38 Galliard is sidetracking from 2,800 feet. Over on Spillman Island in the bay, the J. R. Copeland Oil Co. is pulling the liner in No. 1. The bottom of the hole is around 4,700 feet.

Old holes are being worked over in the Humble Pool by The Texas Co., Galena-Signal Oil Co. and smaller operators.

At Damon Mound, the Humble Oil & Refining Co.'s No. 1 Smith is a 75-bbl. pumper at 3,250 feet. The Sinclair Oil & Gas Co. is going to try and drill through the heaving shale on the Becker on the south side of the dome.

At West Columbia, the Humble Oil & Refining Co. abandoned No. 1 Robinson after vainly trying to work it over at 3,100 feet. The Texas Co. is working over No. 52 Hogg on the east side at 3,650 feet and No. 1 Abrams on the north side.

The Mutual Oil Co. worked over No. 1 Booth at 3,900 feet on the west side of the dome at Blue Ridge and got it back to 150 bbls. No. 2 Booth is now being worked over. No. 1 Bute is drilling below 1,800 feet. The Texas Co.'s No. 11 Robinson is starting.

At Pierce Junction, the Sun Oil Co. is setting casing in No. 1 Ritter on the north side at 3,860 feet and the Humble Oil & Refining Co.'s No. 6 Fitzsimmons on the east side is drilling below 3,345 feet.

Other Pools

In the Batson Pool, the Deutscher Oil Co.'s No. 5 Trustee is a 5-bbl. well at 775 feet. The Ada Bell Oil Co.'s No. 64 Parafine is bailing at 1,150 feet. The Texas Co.'s No. 272 Fee on the north side at Sour Lake is bailing at 2,375 feet.

In the Saratoga Pool, Paggi Bros. No. 3 Louis is drilling at 1,308 feet and the Rio Bravo Oil Co.'s No. 83-B is around 675 feet. In the Markham Pool, the Rycade Oil Co.'s No. 1 Myers is at 2,650 feet on sand and shale. No. 2 Hudson is below 785 feet.

Semi-Pools

Rich and others set casing in No. 1 Ahlers in the Big Creek district in Fort Bend County at 2,386 feet and will bail 30 feet of sand. It is 900 feet south of production there.

The Houston Oil Co.'s No. 7 Pipkin at Big Hill in Jefferson County, is drilling in. The Quick Syndicate's No. 1 Boggs at Stratton Ridge, Brazoria County, is below 3,000 feet. The Fairchild Petroleum Co.'s No. 1 Boggs is idle and the Freeport Sulphur Co.'s No. 12 Dannebaum is rigging. The Texas Exploration Co.'s No. 15 Warren at Hockley, Harris County, is below 1,800 feet.

Well in Live Oak County

The South Texas Oil Co.'s No. 2 Cox in the Three Rivers gas district in Live Oak County, is reported making 300 bbls. by heads at 970 feet. The company's No. 1 Callihan was a gasser. The Houston Oil Co.'s No. 3 Cartwright in that county is drilling below 2,160 feet, after going through 400 feet of gumbo. The Transcontinental Oil Co.'s No. 1 Trexerd in Bexar County was baandoned. The Texas Co.'s 2 Theilman, southwest of Brenham, is drilling below 750 feet. Haught and Bond have started a deep test in Medina County, drilling at 600 feet with cable tools.

South Louisiana

In the Vinton Pool, the Vinton Petroleum Co.'s No. 3 Gray is pumping 50 bbls. at 2,400 feet and the Edgerly Petroleum Co.'s No. 1 McCay, 10 bbls. at 3,300 feet. The Texas-Joint No. 3 Vincent is bailing at 2,350 feet.

The Texas Co.'s No. 23 Gray is below 2,000 feet and the Gulf Refining Co.'s No. 30 Star is around 2,415 feet. The Vinton Petroleum Co. is rigging No. 12 Rescue. The Gulf Coast Oil Co. is setting a liner in No. 5 Gray 1,900 feet. The Just Oil and Refining Co.'s No. 2 Lyons is at 1,354 feet. Marrs McLean No. 5 Gray is below 3,465 feet.

In the Jennings Pool, the Crowley Fuel Oil Co.'s No. 86 Fee is going on the beam at 1,750 feet.

Southwest Fields

The Luling Field was extended one-half mile to the northeast when the Mahlstedt-Mook Oil Co.'s No. 1 Fields came in at 2,248 feet, flowing 750 bbls. by heads. The Beauchamp Petroleum Co.'s No. 1 Fields was abandoned in water some time ago. One-half mile beyond the Fields to the northeast, the Luling Production Co.'s No. 1 Grady resumed drilling, after having been shut down at 2,238 feet. The production on the Fields is approximately 100 feet lower than it is found in the old development. The Royal Oil Co. deepened No. 7 Tabor in the original part of the field and it increased to 800 bbls. per day. The Caldwell Petroleum Co.'s No. 4 Hardeman will probably make a 350-bbl. pumper. The Big Gusher Oil Co.'s No. 1 Walker, 2 miles west of Luling, is showing some oil of 39.2 Be. gravity at 2,425 feet. The crew is fishing for drill pipe stuck in the hole. The Seals Creek Oil Co.'s No. 1 Proctor, southeast of production, is showing for a well in a sand around 400 feet.

Water in the original lime formation is giving operators trouble and there is talk of trying for the shallow sand from 350 to 400 feet for the present, or until market conditions improve. The Soda Springs Oil Co.'s No. 1 Bolton, 5 miles east of Luling, is drilling below 2,565 feet. Tests are drilling around the edges of the Luing Field in Caldwell County and over across the San Marcos River to the southwest of Guadalupe County. C. V. Patton is rigging No. 1 Purcell, 3 miles southeast of Lockhart.

In Guadalupe County, the United North and South Oil Co.'s No. 1 Shanklin is bailing in a sand from 2,050 to 2,080 feet. No. 1 Lopez is being rigged north of the Shanklin. C ou pe and others No. 1 Schenuman is said to be in cap rock at 2,200 feet. Another location has been made southeast. Tieman and others No. 1 Tieman is waiting on casing at 1,900 feet and the Plateau Oil Co.'s No. 1 Banks is setting casing at 2,120 feet. Bergman and Son's No. 1 Imhoff, one-half mile south of Kingsbury, is below 900 feet and the Magnolia Petroleum Co.'s No. 1 Imhoff, 5 miles south of Kingsbury, is drilling at 765 feet. The West Production Co.'s No. 1 Bear, south of Seguin, is shut down at 2,100 feet. The United North and South Oil Co. has timbers on the ground for No. 1 Lynch.

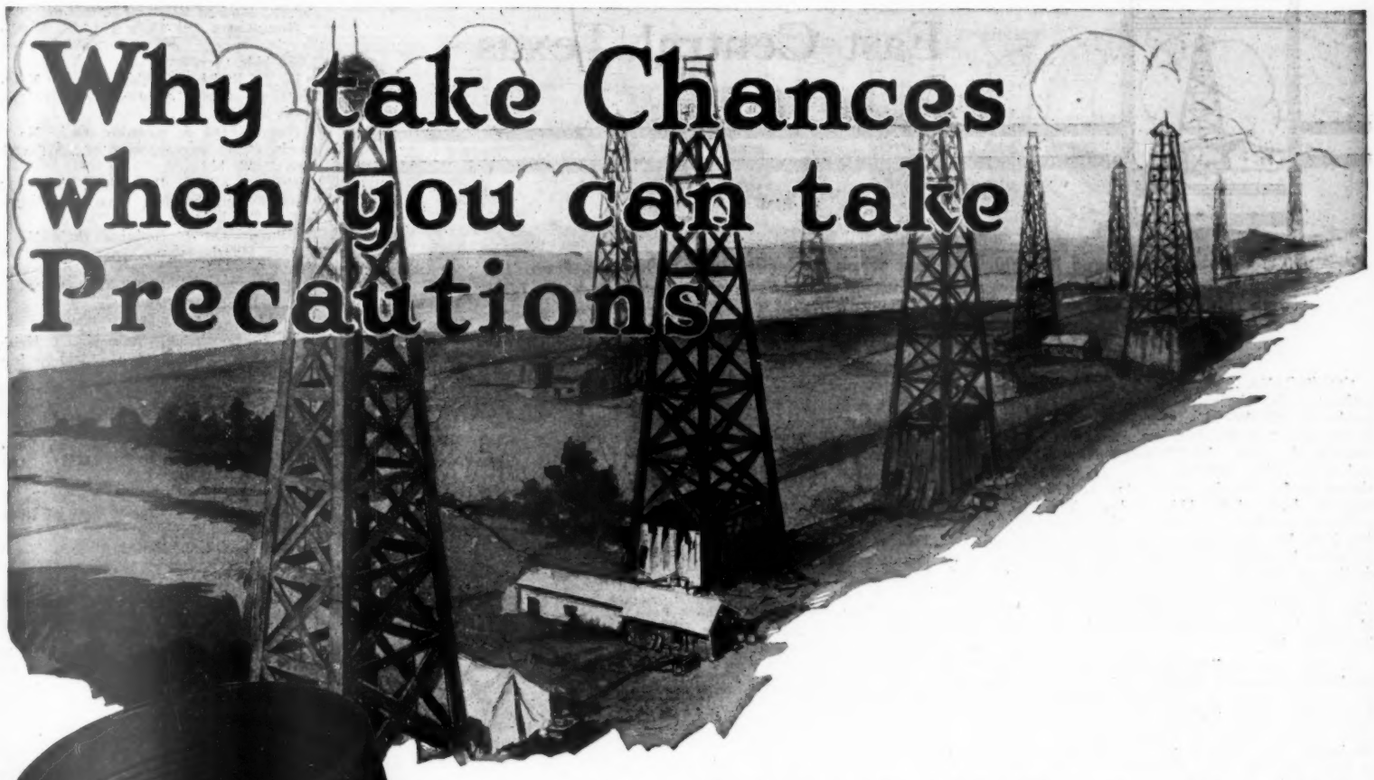
In Gonzales County, Bryan and James No. 1 Billings, southeast of Smiley, is drilling at 2,030 feet. A location has been made 26 miles sout hof Luling.

Laredo

The Laurel Oil Co. deepened No. 1 in the Mirando City-Schott district in Webb County and has a 40-bbl. pumper, testing 45 gravity oil. It is nearly 1 mile southwest from the original high gravity wells developed by the Magnolia Petroleum Co. and Carnahan Oil Co. at 1,940 feet. The light gravity sand was found in the Laurel Oil Co.'s well around 2,000 feet, showing a slight dip to the southwest. The Chico Oil Co. is now deepening its No. 2 Wolcott from 1,720 feet and if the light grade oil is found it will prove up about 5 miles of territory and result

(Continued on Page 89)

Why take Chances when you can take Precautions



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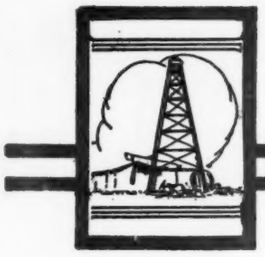


East Central Texas

By Staff Correspondent.

Powell averaged 264,000 bbls. last week, a decline of 61,000 bbls. from the previous week, notwithstanding that 22 new wells showed a total of 47,000 bbls. initial production. Humble, Sun, Gulf and Texas companies now soliciting oil. Only 17 new derricks erected.

CORSICANA, Tex., Nov. 26. — It is estimated that the Powell Field today is producing 222,000 bbls. from 531 wells. It averaged 264,000 bbls. last week, commencing the week with 292,000 bbls. and ending it with 244,000 bbls. It continued to fall Sunday and today at the rate of about 11,000 bbls. a day. The estimated production today is over 132,000 bbls. less than it was on November 13 when it reached its peak. This is a decline of over 37 per cent in less than two weeks and is even more sensational than its rapid rise from 286,547 bbls. on Monday, November 5, to 354,893 bbls. on November 13.

In the week ending November 3 the production averaged 314,000 bbls.. For the second week it averaged 293,000 bbls.; third week, 325,000 bbls. and the week ending September 24, 264,000 bbls. Beginning this week with a production of about 233 000 bbls., following it with an 11,000-bbl. drop today, it looks as if the bottom was dropping out of the field and one guess is as good as another as to what this week's average production will be.

There were 22 oil wells completed last week with initial production of 47,000 bbls., but these failed to have any appreciable effect on the daily production because of the tremendous losses in the wells already in.

The production of the Tidal Buttram Oil Co., which at one time was around 87.000 bbls. a day, was down to 9,800 bbls. on Saturday, and the Humble Oil & Refining Co.'s production was said to be about 73 000 bbls., notwithstanding that it scored several good completions in the week in review.

There is a general scramble for crude among the pipe lines and the Magnolia Petroleum Co., Atlantic Oil Producing Co. and Cobden Fuel Co., which have been the consistent buyers ever since they entered the field, have been joined by the Sun Oil Co., Humble Pipe Line Co., The Texas Co. and Gulf Pipe Line Co. As yet the Prairie and the Sinclair Crude Oil Purchasing Cos. have not purchased any but Humphreys Oil Co. production, although the Sinclair Pipe Line Co. has shipped some tender oil south for the Humble organization.

An Important New Well

An important new completion is the Simms Oil Co.'s No. 1 H. B. Boyd, on the Meador survey, but on a lease adjoining the No. 1 Boyd, which was practically a dry hole. The new well, a south offset to the Tidal Oil Co.'s No. 1 Bressie, which has failed to make a well up to this writing, got sand at 2,957-72 feet and flowed 3,000 bbls. the first 24 hours. The peculiar sand conditions in Powell are well illustrated by this test. It is a location south and three locations southeast of wells that showed little indications of oil, and makes it appear as if there is a very thin streak of pay in the extreme southwestern end of the field that may take a turn southeasterly. On a direct line with it, but four-fifths of a mile southeast The Texas Co. has started a test on the Autrey estate on geological advice. The completion of the good well by the Simms Oil Co. has brought The Texas Co.'s test very much in the limelight and its completion will be awaited with great interest. It is supposed to be located on a separate structure. The Humble Oil & Refining Co.'s T. J. Scruggs lease, on which nothing has been started, lies between the Simms and The Texas Co. properties.

Gushers Keep Coming

The Mutual Oil Co.'s No. 5 Howell, Mathews survey, is in and is good for 5,000 bbls. from sand at 2,916-50 feet. Nos. 2, 3 and 4 are in the sand and are due for completion any day. The Mutual well made 400 bbls. the first hour.

The Skelly Oil Co.'s No. 4 Keith, Mathews survey, flowed 4,880 bbls. the first 24 hours from sand at 2,940-68 feet.

Other completions reported since the last review were as follows:

POWELL PRODUCTION BY LEASE AND COMPANY, NOVEMBER 19, 1923

	No. Wells	Initial Prod.	Nov. 19	Nov. 13
Humble Oil & Ref. Co.:				
Blumrosen	4	16,500	428	460
Brown	6	9,280	1,395	1,748
Cerf A	6	24,200	5,493	12,020
Cerf B	1	4,800	2,075	4,190
Crews	6	38,500	9 447	8,030
Davis	15	56,300	17,550	24,400
Fleming A	6	33,500	11,350	17,275
Fleming B	2	7,300	500	1,329
Gentry A	10	24,850	1,645	1,485
Gentry B	3	9,000	720	680
Humphreys	18	48,800	21,750	22,630
Irvine A	5	24,700	315	279
Irvine C	10	36,400	1,080	1,270
L. L. Kent	1	600	590	....
G. Kent	12	45,700	1,125	2,733
R. I. Kent	1	2,000	....	....
W. J. McKie A	5	9,400	125	145
W. J. McKe B	10	14,100	882	106
Murchison	3	4,150	1,425	320
Ramsey A	8	22,000	3,580	6,330
Ramsey B	10	34,750	5,740	8,082
Walker	7	11,500	5,060	6,500
Total	148	478 330	92,775	120,012
Tidal Oil Co. & Buttram Pet. Corp.:				
Crews	7	67,000	10,800	14,865
Phillips	11	64,200	8,200	20,488
Ramsey A	8	53,000	3,932	6,350
Ramsey B	7	28,900	759	1,455
Thompson	4	4,400	80	170
Total	37	217,500	23,771	43,328
Gulf Prod. Co.:				
Barron	5	17,800	775	4,925
Barry	1	300	....	....
Blumrosen	3	4,900	280	177
Bush	1	4,000	1.045	1,595
Christian	6	15,400	450	560
Crews	9	64,400	19,400	19,600
Gentry	7	22,200	665	595
Murchison	8	21,100	2,975	4,325
McKie	1	400	240	160
Smith	5	22,650	390	400
Witherspoon	8	24,700	215	310
Total	54	197,850	26,435	32,647
Humphreys Oil Co.:				
Fair	1	1,250	26	25
Kent	8	7,500	575	610
R. I. Kent	2	12,400	77	90
Burke	1	300	42	....
McKie	56	192,700	13,283	12,240
Kenner	2	600	10	....
Springfield	2	1,700	120	....
Total	72	216,450	14,133	12,965
U. S. Tex. Oil Co.:				
Burke	4	6,200	383	415
Ramsey	4	6,800	79	150
Total	8	13,000	462	565
Skelly Oil Co.:				
Gentry	2	800	25	87
Ramsey	3	5,100	2,030	3,265
Keith	2	12,000	10,478	5,300
Total	7	17,900	12,533	7,652
Kirby Pet. Co.:				
Fleming	1	12,000	3,560	3,600
Brown	6	6,500	567	550
McKie	3	5,800	2,432	1,885
Total	10	24,300	6 559	6,035
McMan Oil Co.:				
Chapman	10	31,750	1,827	1,320
Chapman	5	5,000	942	826
Total	15	34,750	2,769	2,145
Roxana Pet. Corp.				
Blumrosen	4	4,500	200	234
McKie	8	20,200	506	400
McKie A	8	17,530	4,555	4,610
Total	20	42,230	5,261	5,244
E. L. Smith Oil Co.:				
Keith	5	31,000	17,663	16,300
Ramsey	4	22,300	566	800
Total	9	53,300	18.229	17,100
The Texas Co.:				
Fleming	11	65,000	20,667	34 825
McKie	8	8,600	324	460
The Texas Co.-Magnolia Pet. Co.:				
Kent	15	52,750	2,175	3,112
Total	34	126,350	23,166	38,397
Atlantic Oil Prod. Co.:				
Irvin	13	40,200	1,700	1,708
Kellum	7	67,600	18,939	19,450
Total	20	107,700	20,639	21,158
Simms Oil Co.:				
Boyd	1	250	....	110
Blumrosen	2	765	220	245
Rose	1	10,000	3 725	3,430
Total	4	11,015	3,945	3,785
R. E. Brooks—				
Cerf	3	14,560	4,092	6,220
Hughes Development Co.:				
McKie	13	29,400	710	520
Empire Gas & Fuel Co.:				
Sweatman	1	1,750	....	640
Garland Kent:				
Fleming	3	16,000	10,220	8,755
Mitchell & Jones:				
Burke	2	10,600	480	640
New Domain Oil Co.:				
R. F. Kent	5	2,300	311	350
Sun Oil Co.:				
Kent	4	11,700	562	450
Witherspoon Oil Co.:				
Burke	9	20,100	2,646	2,730
Mutual Oil Co.:				
Howel	1	18,000	4.380	5,370
Collins & Wheelock:				
G. Kent	2	950	....	420
Elliott and others:				
Hill	1	2,500	1,550	1,350
Barclay & Meadows:				
Cerf	1	2,400	1,151	....
Hughes Oil Co.:				
McKie	1	75	10	10
Parker and others:				
Cerf	1	2,000	1,164	1,200
Texas & Brazos Valley R. R. Co.:				
Right of Way.	2	17.500	10,244	13,970
Miscellaneous companies:				
Springfield and Christian	10	7,000	796	1,235
Grand total.	497	1,697,510	288,993	354,893

The Humble Oil & Refining Co.'s No. 6 Crews, Harris survey, sand at 2,949-76 feet, 960 bbls.

Humble Oil & Refining Co.'s No. 2 E. L. Kent, Mathews survey, sand at 2,955-75 feet, 1,200 bbls.

Simms Oil Co.'s No. 3 Boyd, Meador survey, sand at 2,948-70 feet, 5,000 bbls.

Skelly Oil Co.'s No. 3 Keith, Mathews survey, sand at 2,920-60 feet, 1,800 bbls.

Humphreys Oil Co.'s No. 61 McKie, Broyles survey, sand at 2,875-91 feet, 1,500 bbls.

E. L. Smith Oil Co.'s No. 4 Keith, Mathews survey, sand at 2,916-62 feet, 6,000 bbls.

Humble Oil & Refining Co.'s No. 8 Davis, Barry survey, sand at 2,876-2,968 feet, 2,039 bbls.

Humble Oil & Refining Co.'s No. 9 Davis, Barry survey, sand at 2,902-70 feet, 1,236 bbls.

Humble Oil & Refining Co.'s No. 7 Crews, Harris survey, sand at 2,943-70 feet, 2,966 bbls.

Humble Oil & Refining Co.'s No. 4 E. L. Kent, Mathews survey, sand at 2,970-87 feet, 531 bbls.

E. L. Smith Oil Co.'s No. 7 Keith, Mathews survey, sand at 2,944-62 feet, 3,500 bbls.

Atlantic Oil Producing Co.'s No. 5 Kellum, Harris survey, sand at 2,902-60 feet, 3,200 bbls.

Gulf Production Co.'s No. 8 Crews, Harris survey, sand at 2,935-80 feet, 2,200 bbls.

Humble Oil & Refining Co.'s No. 20 Humphreys, Smith survey, sand at 2,911-74 feet, 800 bbls.

Humble Oil & Refining Co.'s No. 8 Crews, Harris survey, sand at 2,948-72 feet, 1,000 bbls.

Humphreys Oil Co.'s No. 60 McKie, Broyles survey, sand at 2,888-2,945 feet, 1,800 bbls.

Humble Oil & Refining Co.'s No. 10 Crews, sand at 2,978-86 feet, 1,000 bbls.

Humphreys Oil Co.'s No. 62 McKie, Broyles survey, sand at 2,875-2-919 feet, 1,800 bbls.

Tidal-Buttram Will Store Crude

The Tidal-Buttram Oil Co. has had pipe line connections cut off from its Crews and Phillips leases and will store all its production from those properties.

The Tidal-Buttram Oil Co. cored 2 feet of oil sand from its No. 1 Bressie, Bragg survey, at 2,960-62 feet. The well had not been completed and showed little to indicate that it would have any important bearing on production, although it is a north offset to a big well reported in today.

Little New Work Started.

Seventeen derricks were erected in the week in review. These were the Parker and others' No. 1-B Cerf B, Smith survey; McMahan and others' No. 1 Hohnes, Bragg survey; Mutual Oil Co.'s No. 8 and No. 9 Howell, Mathews survey; Johnson & Stock's No. 3 and No. 4 Harvard, Mathews survey; Atlantic Oil Producing Co.'s Nos. 10, 11 and 12 Kellum, Harris survey; Simms Oil Co.'s No. 2 and 3 Kellum, Greer survey; Humble Oil & Refining Co.'s No. 14-B Ramsey B, Smith survey; Humble Oil & Refining Co.'s No. 2 Hill, Smith survey; J. K. Hughes' No. 5 Alexander, Smith survey; Texas & Brazos Valley Railroad Co.'s Nos. 3, 4 and 5 Right of Way, Mathews survey.

News from Fields of Canada

By Victor Lauriston

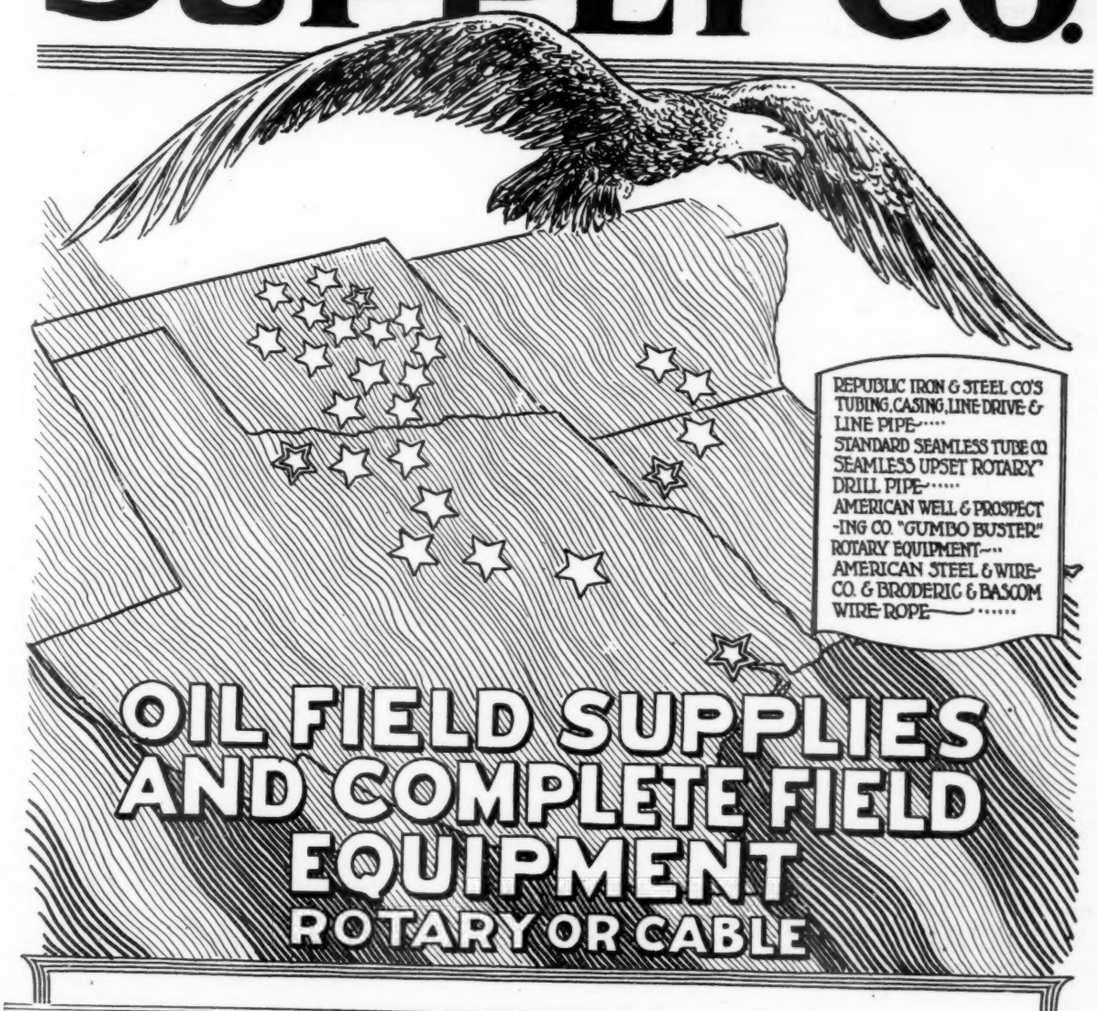
CHATHAM, Ont., Nov. 24.—Later information regarding the British Petroleums, Ltd., No. 2, Section 30-46-6w-4, in the Irma-Fabyan-Wainwright Field of east-central Alberta, indicates that it may be a somewhat larger producer than was first estimated. According to a statement of D. O. Credille, the head driller, the well is now flowing by heads through an 8¼-inch casing; and after a flow line is installed it will possibly make as much as 200 bbls. a day. There is no water present, and the well is undoubtedly a commercial proposition in its present condition. The oil is from 13 to 16 gravity with asphaltic base. At the minimum estimate of 100 bbls. a day it is the largest well yet drilled in the Canadian West.

Drilling on the test was started last June, following the completion of British Petroleum, Ltd., No. 1, Section 36-45-7w-4, as a gasser. No. 2 was designed as a deep test to reach a supposed oil sand in the top of the Dakota formation, 150 feet or less below the gas sand in No. 1. The present production was actually encountered somewhat higher in the bottom of the Benton shale, in a 17-foot oil sand between 2,018 and 2,035 feet. This sand was drilled through and work shut down, waiting for further equipment; and when the well was reopened to resume work it was found to have drilled itself in. Besides the 100-bbls. or more production, it has about 500,000 feet a day of wet gas.

The test was drilled by the Edmonton Gas & Development Co. under the supervision of E. H. Campbell, field manager, with D. O. Credille as head driller. A heavy rotary outfit was used throughout;

(Continued on Page 97)

REPUBLIC SUPPLY CO.


REPUBLIC IRON & STEEL CO'S TUBING, CASING, LINE DRIVE & LINE PIPE
STANDARD SEAMLESS TUBE CO SEAMLESS UPSET ROTARY DRILL PIPE
AMERICAN WELL & PROSPECTING CO. "GUMBO BUSTER" ROTARY EQUIPMENT
AMERICAN STEEL & WIRE CO. & BRODERIC & BASCOM WIRE ROPE

OIL FIELD SUPPLIES AND COMPLETE FIELD EQUIPMENT
ROTARY OR CABLE

District Headquarters
HOUSTON, TEXAS
Mexia, Texas
Corsicana, Texas
(Mildred)

District Headquarters
SHREVEPORT, LA.
Haynesville, La.
El Dorado, Ark.
Smackover, Ark.

District Headquarters
WICHITA FALLS, TEX.
Graham, Texas
Breckenridge, Texas
Electra, Texas
Burkburnett, Texas
Wilson, Okla.
Duncan, Okla.
Wirt, Okla.

District Headquarters
TULSA, OKLA.
Tonkawa, Okla.
Henryetta, Okla.
Yale, Okla.
Shidler, Okla.
Pawhuska, Okla.
Barnsdall, Okla.
Haskell, Okla.
Beggs, Okla.
Slick, Okla.
Bristow, Okla.

Pennsylvania-West Virginia

By D. S. Wakenight

Preston Oil Co.'s No. 9 Stone, Hocking County, Ohio, makes 130 bbls.; Macher Est.'s No. 10 Tracey, 80 bbls.; Ohio Fuel Supply Co. gets 80-bbl. producer in Perry County, Manufacturers Light & Heat, 25-bbl. well in Marshall County, W. Va., Waynesburg Home Gas Co. 20-bbl. well in Greene County, Pa.

PITTSBURGH, Pa., Nov. 26.—Operators in the Eastern fields were inclined to take a more hopeful view of the oil situation during the week. Certain conditions improved and not a few expressed the opinion that the turning point had been reached and from now on, unless something unforeseen developed, the tendency would be upward. The most optimistic, however, did not claim the change would come much before next spring. Once inroads have been made on the stocks in storage the industry will have a different story to tell.

In development work the most noticeable change was in the average size of the completions in the deep sand territory in southeastern Ohio. More and better producers were completed in this district than in several months. In the southeast quarter of Section 14, Starr Township, Hocking County, the Preston Oil Co. got a good producer when it drilled No. 9 on the J. F. and L. J. Stone farm through the Clinton sand. The first 24 hours after shot it produced 130 barrels. In Section 18, Ward Township, the Kachelmacher Estate completed and shot No. 10 on the Joseph Tracy farm. The well produced 80 barrels the first 24 hours. The Pure Oil Co.'s No. 3 on the A. D. Montgomery farm, in Licking Township, Muskingum County, from which they had been swabbing 40 bbls. a day, was shot in the Clinton sand and its production increased to 85 bbls. a day. In Newark Township, Licking County, J. T. Bebout shot in the Big Lime formation, his test on the D. D. H. Jones farm, on the south side of Newark City, and produced 70 bbls. the ensuing 24 hours, flowing its production. In South Hopewell Township, Muskingum County, the Neely-Clover Co. drilled through and put to pumping a test on the J. W. Dickson farm. It is a natural producer for 25 bbls. a day.

Some Lighter Wells

In the southwest quarter of Section 30, Jackson Township, Perry County, the Lincoln Oil & Gas Co.'s test on the Charles Elder farm is not good for more than 6 bbls. a day in the Clinton sand. In Section 33, Ward Township, Hocking County, Scott Westbrook & Co. have a duster in the Berea grit on the H. Hysell farm, one-half mile west of production. In the same section, Sharren & Son's No. 3 on the G. P. Stacy farm is a light gasser in the Clinton sand. In Jefferson Township, Noble County, Jerry Buckley & Co. have a 4-bbl. pumper in the Berea grit at No. 2 on the Louisa Wexbacher farm. This location is 400 feet north of the first test. F. Marion Snyder & Co.'s No. 11 on the George Miller farm, in Section 33, Harrison Township, Knox County, is a 2-bbl. pumper. In the same township, Section 17, Snyder & Rohrer have completed and shot in the Berea grit No. 5 on the High L. Greene farm, a 3-bbl. pumper. Thornily & Poole's test on the Thomas Harrington farm in Section 8, Ludlow Township, Washington County, is a duster in the Big Injun sand.

Duster in New Pool

In what is thought to be a new Berea grit pool, in York Township, Morgan County, the Sun Oil Co. completed No. 3 on the Charles Knapp farm, dry in the Berea grit. In Newport Township, Washington County, J. E. Shankland & Co. have a Berea grit duster at No. 4 on the Jane Eddy farm. In the same township, Otis Reckard & Co.'s No. 4 on the Ella A. West farm is through the Keener sand and dry. In the Rinards Mille district, Washington Township, Monroe County, the Carter Oil Co. started to drill a test on the R. E. Griffin 20 acres. In the northeast quarter of Section 22, Perry Township, Licking County, Whitehill & Heasley started a test on the M. V. McGinnis farm, 1,000 feet north of the test on the Staggers farm. In Jackson Township, Perry County, J. W Thompson & Co. started to drill on the Edward Hull farm.

Good Producer in Perry County

In Section 36, Coal Township, Perry County, the Ohio Fuel Supply Co. completed and shot in the Clinton sand, No. 4 on the Charles Trimmer farm, which produced 80 bbls. the ensuing 24 hours. In Liberty Township, Washington County, Payne & Erbs have a small gasser in the second Cow Run sand at a test on the Harvey Scott farm. In Section 10, Rush Creek Township, Fairfield County, the Planet Oil Co. and others got a dry hole when they drilled their test on the D. F. Householder farm through the Clinton sand. This is 1,200 feet northeast of the Montana Oil & Gas Co.'s good producer on the Levi Kennedy farm.

West Virginia

The West Virginia fields completed light producers and many gas wells. On Gillespie run, Grant district, Ritchie County, the South Penn Oil Co.'s test on the Petticord farm is good for 12 or 15 bbls. a day in the salt sand. On the same stream, the Burke Oil & Gas Co.'s test on the J. Burke farm has a light gas pressure and good for about 2 bbls. a day in the Big Injun sand. In Union district the following gassers have been completed in the Big Injun sand: Hope Natural Gas Co., Nos. 2 and 6 on the T. A. Mason and Roscoe Perrin farms; Pittsburgh & West Virginia Gas Co., No. 2 J. E. Day, and the Carnegie Natural Gas Co.'s No. 1 W. A. Reed farm. The same company's No. 4 on the S. S. Sharp farm is a gasser in the third salt sand. The Hinzelman Drilling Co.'s test on the J. I. McIntyre farm is dry in the Big Injun sand. In Grant district, the Astron Oil Co. has a gasser in the Maxon sand on the Herman Stursburg farm.

Near Centerville Post Office, Centerville district, Tyler County, Baker & Eagon have a dry hole at a test on the O. D. Spencer farm. Eight miles west of Pine Grove, Greene district, Wetzel County, the Silver Hill Oil Co.'s test on the John Koch farm is good for 8 bbls. a day in the Gordon sand. This well was drilled to a total depth of 3,060 feet.

Gassers in Kanawha County

On Kelly's Creek, Cabin Creek district, Kanawha County, the United Fuel Gas Co.'s No. 36 on the Sunday Creek Coal Co.'s property, is a Weir sand gasser. On Cabin Creek, the South Penn Oil Co.'s No. 7 on the Coalburg Collerie Co.'s tract is a gasser good for 4,000,000 feet a day in the Berea grit. On the Guyandotte River, Logan district, Logan County, the same company's wildcat on the Yawkey-Freeman farm is a gasser of the same capacity in the Big Lime formation. On Middle Fork of Mud River, Carroll district, Lincoln County, C. T. McGee's second test on the Herman Moore farm is a good gasser in the Berea grit. In Freeman's Creek district, Lewis County, Steinbeck & Krouce have a fair gasser in the Big Injun sand at a test on the M. Bailey farm. In Grant district, Pleasants County, the Better Oil Co.'s No. 3 on the O. W. Guard farm is a very light pumper in the Cow Run sand.

The Hope Natural Gas Co.'s test on the J. S. Jarvis farm, in Washington district, Calhoun County, is a gasser in the Maxon sand. In the same district, the Home Gas Co.'s No. 3 on the Warren & Clark Jarvis farm is dry in the lower sand, but a fair gasser in the salt sand. In Center district, Wetzel County, the Hope Natural Gas Co. has a Big Injun sand gasser on the Daniel Kuhn farm.

Oil Producer in Marshall County

Liberty District, Marshall County, has departed from gas wells and furnishes a fair oil producer. It is the Manufacturers Light & Heat Co.'s second test on the D. W. Keller farm. It is good for 25 bbls. a day in the fifth sand. In Sardis district, Harrison County, F. S. Gehring's test on the J. C. Duncan farm is a light producer in the Gordon sand. In Lincoln district, Tyler County, Cox, Gorrell & Co.'s test on the S. W. Anderson farm, formerly reported a gasser, has been drilled 10 feet deeper into the Big Injun sand for 10 bbls. a day. In Washington district, Pleasants County, W. C. Patterson got a very light pumper in the Cow Run sand at his No. 380 on the J. Kigher farm. On McKim Creek, McKim district, the Harrisville Oil & Gas Co.'s test on the John Jewell farm is a duster in the Big Injun sand. In the same district, the Creek Oil Co.'s second test on the L. E. Fleming farm is a duster in the same formation. On Shawnee Run, Lafayette district, the Ellenor Oil & Gas Co. has moved in a new drilling machine and started to drill a test on the B. O. Hooper farm. On Indian Creek, McElroy district, the American Oil Development Co. is starting a test on the Lee Kyle farm. On Cain's Run, Reedy district, Roane County, the Heck Oil Co. has the rig completed for a test on the Simms heirs' farm. On Gillespie Run, Grant district, Ritchie County, the South Penn Oil Co. has a rig up on the W. E. Mason farm. In New Milton district, Doddridge County, the Hope Natural Gas Co.'s test on the W. H. H. Douglass farm is a 5-bbl. pumper in the Big Injun sand. In Union district, Lincoln County, the Huntington Development & Gas Co. has a gasser in the Big Injun sand at a test on the Garfield Scites farm. In Curry district, Putnam County, the Sovereign Gas Co.'s test on the W. W. Dent farm is a gasser in the same formation.

Drilling and Starting Tests

In Grant district, Ritchie County, Norris & Messer started to drill a test on the David McIntyre farm. In Murphy district, Hyas & Roberts started on the W. W. Lawrence farm. In Union district, the Carter Oil Co. is hauling tools to a location on the Adams farm. In the same district, Robert Elder is rigging up on the J. E. Day farm. C. E. Bruden & Co. are due in the Keener sand on the P. C. Moats farm. In Grant district, B. Pritchard & Co. started to drill on the J. I. Vincent farm. In Murphy district, the Hope Natural Gas Co. is due in the sand on the O. C. Coll farm. In Union district, Wood County, Bennett & Earl are rigging up on the B. F. Frazier farm. In Walker district, Rexroad & Davis started to drill on the J. W. Marshall farm. In McKim district, Pleasants County, A. J. Cunningham is drilling on the J. R. Jewell farm. In Layfayette district, W. J. McCullough & Co. have part of the rig material at a location on the E. C. Owens farm. In McElroy district, Tyler County, the Wiser Oil Co. is down 2,500 feet on the Simon Lyons farm. In Meade district, the Melrose Oil Co. is ready to start on the F. Flesher farm. In Grant district, Doddridge County, the Eastern Petroleum Co. shut down at 2,460 feet on the Anna A. Coulehan farm. In Glenville district, Gilmer County, the Carnegie Natural Gas Co. is fishing on the Ida Hiney farm. In Troy district, the Star Oil & Gas Co. has made a location on the Clarence Woofter farm. In the same district, P. G. Bish & Co. are building a rig on the Roy Stalnaker farm.

Lewis County

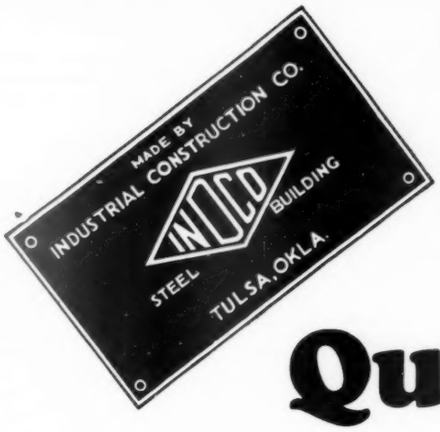
In Freeman's Creek district, Lewis County, the Carnegie Natural Gas Co. is rigging up on the Evan Keyser farm. In the Collins settlement, Newton Clayton is building a rig on the G. R. Snyder farm. F. W. Bartlett is building a rig on the W. B. C. Kendall farm, in Mannington district, Marion County. In Lincoln district, the Null Gas Co. has started to drill on the Niptines heirs' farm. In Harper district, Roane County, the Empire Petroleum Co. has started to drill on the William M. Haught farm. In Geary district, the United Fuel Gas Co. is starting to drill on the W. H. Short farm.

Southwest Pennsylvania

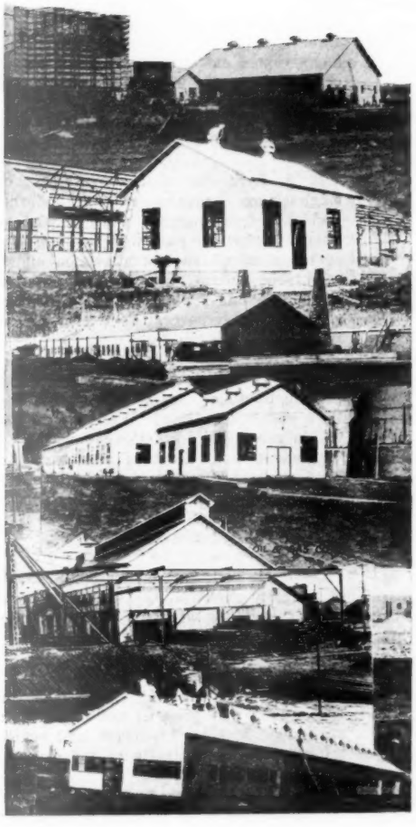
Greene County, after completing nothing but gas wells, has furnished an oil producer. Located on Ruff's Creek, Washington Township, the Waynesburg Home Gas Co. has drilled a test on the Daniel F. Brown farm through the 50-foot sand. It is estimated to be good for 20 bbls. a day. In Morris Township, Washington County, the Carnegie Natural Gas Co. completed a Gordon sand gasser on the Harry Conger farm. The Keystone Oil & Gas Co. has a Big Injun sand gasser at a test on the M. Caseman farm, in Springhill Township, Greene County. In the same district, the Natural Gas Co. of West Virginia completed and got a gasser in the same formation on S. Leslie farm. Boundy Bros. got one of the same kind on the John Waters farm. In Whitely Township, the Peoples Natural Gas Co.'s test on the Lucy Patterson farm and a test on the Warren Pyles farm are both gassers in the fifth sand. In the same township, the Philadelphia Co.'s test on the J. F. Lantz farm is a gasser in the Bayard sand. On Pigeon Run, Springhill Township, the Carnegie Natural Gas Co. has a light gasser in the salt sand on the William Johnson farm. One mile south of Sycamore, Center Township, the Manufacturers Light & Heat Co. got a gasser in the Pittsburgh coal at a second test on the Closser heirs' farm. In Aleppo Township, the Carnegie Natural Gas Co. drilled its second test on the P. Garey farm to a total depth of 3,470 feet. No oil and only a light gas pressure was found in this well.

FRANCO-CZECH OIL TREATY

Certain French commodities sent into Czecho-Slovakia are, from September 1, subject to a reduction of from 20 to 75 per cent on the basic rates. In return for these concessions certain goods sent from the latter to France, its colonies and possessions, included in which is petroleum, are to enjoy most favored nation treatment, that is, the minimum tariff as regards import duties, surtaxes, etc.



The Mark of a Building of Quality and Service



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In either sales or stock inventories they are placed high because of their proven quality.

Their years of service are well known and their established reputation for easy removal is likewise appreciated.

If you are planning to build a structure let our engineering department give you a design and estimate.

Industrial Construction Company

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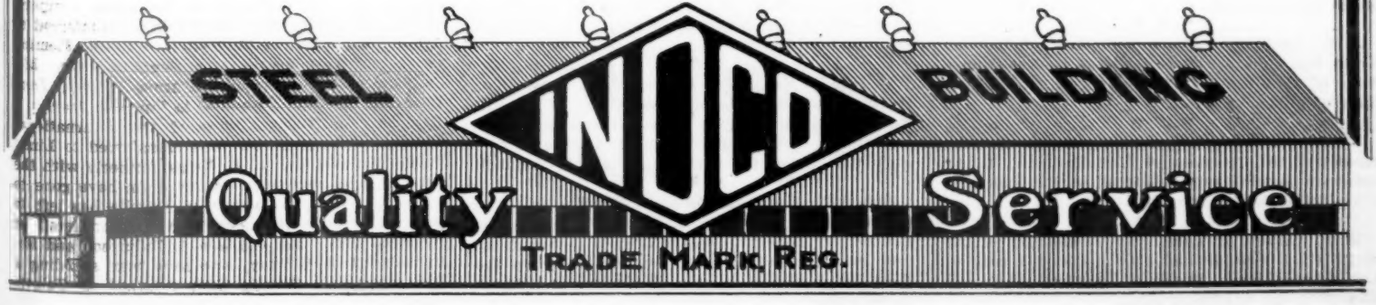


MEN KNOWN IN OILDOM

O. H. Berryman

O. H. Berryman started his career in the oil business with the Gulf Refining Company at Port Arthur, Texas, when the construction of that plant was in its infancy. After leaving the Gulf Refining Company in 1906 he was connected with the Waters Pierce Oil Company in the general superintendent's office at Mexico City and after three years with that concern was made manager of its refinery at Texas City, Texas.

In 1914 he became connected with the Cosden companies and was transferred to Cushing in charge of their plants. Among the refineries under his direction at Cushing were the Peerless Refining Company, Cosden & Company and the Inland Refining Company. In 1918 the latter company sent him to Fort Worth, Texas, for the purpose of constructing and operating its plant, which was later purchased by the Transcontinental Oil Company.

Mr. Berryman is at present manager in Wichita Falls, Texas, for the Interstate Gasoline Company, which operates its own refinery, pipe lines and casinghead plant. He was born December 20, 1882, at Brunswick, Ga.

PERSONAL PARAGRAPHS

R. M. McNelly, who has been in charge of service stations for the Diamond Refining Company, Kansas City, resigned recently and is now in Chicago, his former home.

* * *

C. S. McGuire, Bert Mechling and J. W. McKee, of Pittsburgh, Pa., have been looking over the Cumberland, Monroe and Russell County fields of southern Kentucky.

* * *

M. T. Kappele, formerly with the Bridgeport Machine Company, has joined the sales force of the Guiberson Corporation, of Tulsa, and will specialize on its new underreamer.

* * *

J. W. Loman of Loman Brothers, of Bowling Green, Ky., is in the Cumberland and Monroe County fields of that State, and buying royalty interests there on producing leases.

* * *

L. A. Schumacher, purchasing agent for the Kingwood Oil Company of Okmulgee, and C. H. Burquist, general superintendent of the company, were Tulsa visitors recently.

* * *

M. F. Waters, of Tulsa, general manager of the Smith Oil & Gas Separator Company, has gone to Los Angeles for a month to establish office and factory in the California Field.

S. P. Tschappat, who has been connected with the Crowell Packer Company for the past two years, has joined the Oklahoma and Kansas field force of the Guiberson Corporation of Tulsa.

* * *

L. V. Drake, treasurer of the Gasoline Products Co., which controls the Cross cracking process, has returned to Kansas City from a business trip to England. He left in mid-summer.

* * *

W. O. Underwood, of Greenfield, Mo., has been appointed head of the southwestern oil inspection district of Missouri by Asa Butler, State inspector of oils. He will succeed Q. G. Smart, resigned.

* * *

William Broadhurst of Arkansas City, Kans., an independent operator, spent several days in Tulsa last week on business connected with two wells he is now drilling in Grant County, Oklahoma.

* * *

Floyd Bradford of the Bradford Rig & Reel Co., with head offices in Tulsa, is in Casper examining the business conditions in the Rocky Mountain region and obtaining a line on the fields there.

* * *

Friends of Clifton W. Sears, assistant general manager of the East Ohio Gas Company, Cleveland, Ohio, will be glad to know that he is back at his office, much improved in health after his long illness.

* * *

J. C. McMahon, division superintendent of production for The Texas Company with headquarters at Wichita Falls, attended a conference of executives of the company in Fort Worth last week.

* * *

George Bryan, of Richmond, Va., author of Bryan's Law of Petroleum and Natural Gas, has been elected president of the Virginia State Bar Association. He formerly practiced law at Titusville, Pa.

* * *

Harry Shaw, formerly owner of the Oil News, Galesburg, Ill., and now publisher of a daily newspaper in Waterloo, Ia., was a Kansas City visitor last week. He spent several days at Excelsior Springs, Mo.

* * *

F. R. Sheller, of the Paragon Development Company, of Toledo, Ohio, spent some time in Cumberland, Monroe and other southern Kentucky counties, looking after the completions of the pipe line from the field to Glasgow.

* * *

W. H. Landreth of Joplin, Mo., one of the officers of the Landreth Production Company, operating in the Ibex Pool in Shackelford County, stopped over a day in Fort Worth, on his way to inspect the company's field work.

* * *

George Porter of Petrolia, Ont., has left under a three year's contract to drill in the Mesopotamia fields. John Crowder has arrived at Toronto, en route from England to Petrolia, after some years spent in foreign fields.

* * *

F. M. Devin of the C. & G. Cooper Company, Mount Vernon, Ohio, attended the fall conference of the Natural Gasoline Manufacturers at Fort Worth, Texas. He also called on the trade in Fort Worth and adjoining territory.

* * *

A. P. Minchew, oil operator, of Wichita Falls, Texas, has returned to his home from a two month's trip covering the provinces of Canada. He made a personal inspection of the oil fields in the Peace River district and may later decide to do some development in that territory.

* * *

W. Duncan McDermid of Sarnia, Ont., formerly of Petrolia, has been appointed supervisor of Government Petroleum bounties. The position, under the Department of Trade and Commerce at Ottawa, was made vacant recently by the death of J. C. Waddell.

* * *

Nelson K. Moody, president of the Prairie Oil & Gas Company, and Dana H. Kelsey, vice president and general manager, were in Tulsa last week going over the affairs of the company, and inspecting the West Tulsa refinery of the Producers & Refiners Corporation.

Several officials of the Transcontinental Oil Company are in Tulsa, going over the affairs of the local office and visiting adjacent fields. They are: F. B. Parriott, president; T. R. Cowell, secretary, and M. L. Benedum, chairman of the board.

* * *

Scott Ferris, former congressman from Oklahoma, visited the Burbank Field last week as a representative of the companies headed by former Governor C. N. Haskell. The Middle States Oil Company, one of those owned by the Haskell interests, has some properties in the Burbank district.

* * *

Albert R. Jones, chairman of the board of the Mission Oil Company of Kansas City, has been in New York for the past two weeks. J. W. Parker, vice president, who was with him has returned. Mr. Parker reports business conditions and the financial outlook in the East as "satisfactory."

* * *

John L. Lentz, of Columbus, Ohio, president of the American Insurance Union Corporation, and W. A. Robinson, head of W. A. Robinson & Company, of New Bedford, Mass., have been added to the board of directors of the Southern States Oil Corporation, in which they are both large stockholders.

* * *

G. L. Lincoln has resigned his position with the Union Gas & Oil Company at Ayersville, Ky., and has accepted one with the state highway department of Kentucky. He will move his family from Ayersville to Louisa, Ky., and will be engineer in charge of the work on the Louisa-Blaine road, running through the North Weir Field.

* * *

R. S. Lord, the well known head of the Hope Engineering Company, and one of the prominent builders of engineering work in the west, was a Casper visitor the past week looking after the work of his firm, which has a branch office at Casper. The Hope Engineering Company completed several large pipe line projects in Wyoming this year and expects to have several more that are projected for 1924.

* * *

C. C. Olson, head of the economics department of the Marland Oil Company, left last week for New York and Washington. While in the latter city he will be admitted to practice before the United States Supreme Court. He is a graduate of Georgetown University and practiced for a time before the United States district court in Washington, which gives him the privilege now of admission to practice before the highest tribunal.

* * *

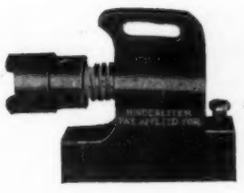
Lewis H. Thornton, of Wellsville, N. Y., president of the New York State Oil Producers Association, who is spending a month in Tulsa, says that the recent cut of 15 cents in the Pennsylvania oil market, making New York State and Bradford crude $2.60, has been discounted for some time by the operators in that region. "Since early summer," he says, "there has been no drilling in these oil fields on flooded leases. Producers and refiners are contributing enthusiastically to the association for its campaign of advertising."

* * *

William Wills of Sarina, Ont., has returned to the Trinidad oil fields after a three months' furlough in Canada. Mr. Wills previously spent three years in Trinidad. Mr. and Mrs. Joseph Patterson, Jr., of Petrolia, have reached England en route for Borneo, where Mr. Patterson is under a 5-year contract for the Anglo-Saxon Oil Company. Ray Patterson of Dunnville, Ont., will leave shortly for the Persian fields. George Harding, for some 18 months with the International Petroleum Company in Peru as motor mechanic, has been transferred to the drilling staff in Colombia. William Fleming has returned to Canada from Negritos, Peru. Mr. and Mrs. Edward Howard returned recently from Barranca-Bermeja, Colombia, to Toronto, Walter S. Reid, of the Toronto office of the International Petroleum Company, has been transferred to Lima, Peru. Mr. and Mrs. A. E. Burns, formerly with the International Petroleum Co., in Peru, have gone to Colombia. Jerry Trangmar of Petrolia has left to join the International Petroleum Company staff at Negritos, Peru. Mr. and Mrs. J. Thompson and Mr. and Mrs. J. J. Downey, who have been spending a few months in Canada have returned to Talara, Peru.

WHEN CABLE TOOL JOINTS STICK

HINDERLITER JOINT BREAKER



Joint Breaker

Breaks Them EASY!

The HINDERLITER JOINT BREAKER is designed for use in unwrenching oil well tools and is used in connection with a Circle Jack and Rack.

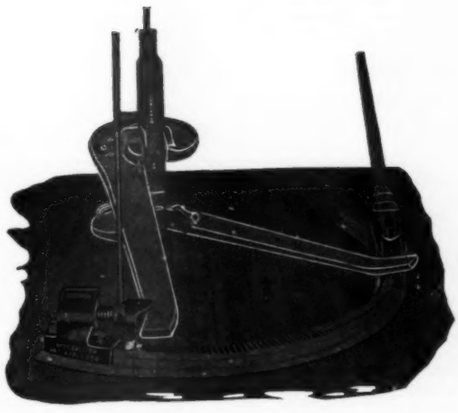
The JOINT BREAKER not only saves time in breaking any size cable joint but it can also be operated by one man and it eliminates using long pieces of pipe on the lever handle of the Circle Jack.

It positively eliminates the danger of the old method of breaking cable tool joints, which was the cause of many accidents.

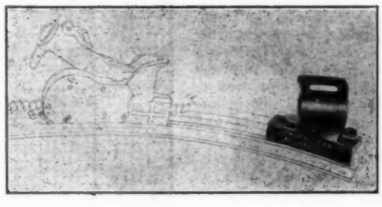
Its construction is strong and rugged and is many tons stronger than the Circle Jack and Rack.

The operation of the JOINT BREAKER is as follows: When unscrewing or breaking a cable tool joint the tool wrenches are set up under ordinary wrench handle pressure by the operator with the movable circle jack and rack. A crowbar is then used to unscrew the jack screw out of the JOINT BREAKER a distance sufficient to break or release the joint, after which the operation of unscrewing is completed with the movable circle jack.

By removing the sleeve and jack screw the JOINT BREAKER body can be used as the wrench post pin which is part of the Circle Jack and Rack.



Breaking a Joint



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Improved Rotary Develops Wider Use

Heavier and Speedier Equipment Being Employed, Notably in Southern California, and Wyoming Experimenting

By P. L. McGreal

Since the drilling of the famous Lucas well at Spindletop, near Beaumont, Tex., with a rotary outfit, the rotary has come into general use. There has been such a continuous improvement in this machinery that the rotary outfit that was used to drill the Lucas well would today hardly be recognized as an oil well outfit. The rotary method of sinking wells successfully to great depths through loose sandy formations is now used extensively in Louisiana, Arkansas, Texas, Oklahoma and in California where extra heavy equipment has to be used.

While the system of rotary drilling used in the Texas, Louisiana and California and Mexican fields and in some of the Oklahoma districts, known as the hydraulic method, first came into prominence at Spindletop in 1901, its uses in a less efficient mechanical form were noted in France as far back as 1841 and subsequently in Germany and England. It had also been employed in the original Corsicana Field and in early-day operations in California.

Use Spreading

The use of the rotary method is spreading. Recently rigs have been shipped to the Wyoming fields from northern Louisiana and that method of drilling will be employed in the development of prospective territory in Colombia, Venezuela and the Argentine. Operators in the Rumania, Baku and other European districts are being educated to its use by American manufacturers and equipment has recently been sent to India from the United States. Engineers from English and French oil companies have visited plants and fields in this country, studied the rotary system and watched its operation in the various fields.

For many years a bitter rivalry existed between the advocates of the percussion, or standard cable method of drilling, and the rotary men. Old timers will recall the animosities engendered during the early days in California and in the South Texas fields. Cable drillers referred to the rotary as a "coffee grinder" and the rotary men countered by calling the cable drillers "rope jerkers" or "up and down men." Physical violence between the two classes of men was not uncommon. This antipathy extended to the operators themselves. During the boom days at Spindletop, Sour Lake, Jennings and Humble, hundreds of operators who had been successful as producers in the Pennsylvania and Ohio fields, where the cable system of drilling prevails, came to South Texas to seek investments and returned home without acquiring leases or production, simply because they did not understand the rotary system of drilling and learned that the cable method could not be employed successfully.

Constantly Improved

This prejudice has disappeared and we now find men who are familiar with both systems and operate either as occasion demands. Operators adopt the method best suited to their needs. As stated, great improvements have been made in the rotary system during the past 20 years, thereby removing many of the objections to its use. The rotary system consists of rotating drill pipe to which is attached a bit by means of a revolving table. A continuous stream of mud-laden fluid, under pressure is forced to the bottom of the hole, returning to the surface outside of the drill pipe. This mud-laden fluid carries away the "cuttings" and also "walls" up the hole. No casing is necessary except the 10 or 12-inch surface casing, usually set at from 300 to 500 feet, depending upon the depth to which the hole is to be drilled. The mud plastered to the walls of the hole and the hydrostatic pressure of the fluid serves the purpose of casing while drilling is in progress. The rotary drills with ease and speed and there is no question about it being a hole maker, but objections have been advanced that the semi-automatic removal of the "cuttings" from the bottom of the hole tends to carelessness and lack of accuracy in logging the formations penetrated, especially in drilling wildcat wells. These objections have been met by the practice of "rat-tailing" ahead, or drilling a small hole and by frequent coring of the formations.

Three sizes of casing are used in the Gulf Coast Belt. First, the surface, as has been indicated. Then 8¼-inch around 2,600 feet or 2,800 feet and 6⅝-inch above the oil sand. The hole is usually started with a fishtail bit. For hard formations rock and roller bits are used.

Tool joints set at every fourth or fifth connection strengthen the drill stem and help prevent it twisting off while rotating under pressure.

The rotary driller notes the progress in depth by markings on his drill pipe and changes in formations by the action of the mud pump, rotary table and speed of drilling. The first cost of a rotary outfit is greater than that of cable tools and more men are necessary, therefore labor costs are higher. These, however, are offset by the fact that more hole can be drilled in a given time and heavy gas pressures are more easily controlled with the rotary. Other advantages and disadvantages depend upon local conditions.

Heavier Types Now

Rotary drilled wells were first drilled with a light rotary, a 25 or 30-horsepower steam engine, a 25- to 35-horsepower boiler and with the use of 4-inch and 6-inch line. The heavy type rotary today requires one and sometimes two 50-horsepower engines, and two 40 to 50-horsepower boilers, and draw works of the heavy type now in use. Rotary equipment used in Texas and Louisiana is much lighter than that used in California and holes are usually finished with 6-inch or smaller casing. It has been found in practice that in many wells it would be advantageous to start with a larger-sized hole, even when finishing with 6-inch casing, in order to facilitate a proper segregation of fluid-bearing strata for testing or for protection.

Some very deep rotary drilled holes have been recorded. The Gulf Production Co. recently completed one below 5,200 feet in the Orange Pool. In the deep sand section of the Humble Pool, the old Producers Oil Co. went to 5,410 feet. Holes drilled to 4,000 feet are common in every pool, but the deepest was the Standard Oil Co.'s No. 11 Packard, Kern County, California, drilled to 6,240 feet.

In no department of oil field operations has more rapid advance been made. As rotary drilling tools and equipment have improved, the field for their use has greatly extended. "Frozen" drill pipe is one of the difficulties encountered in this type of drilling. As the hole becomes deeper and the diameter of the drill pipe decreases, the danger of sticking increases. Particularly is this true in California, where wells of great depth are common, says Boyd A. Slenker in the California Mining and Oil Bulletin. Shooting effectively meets the problem of loosening frozen drill pipe. When the diameter of the pipe is very small, and the working room limited, the shooter is equipped with special brass-tube torpedoes of diameters sometimes as small as seven-eighths of an inch. The great variety of well shooting work can be gauged from the fact that it requires torpedoes ranging from seven-eighths of an inch in diameter, and but a few inches in length, to 10 and 12 inches in diameter and many feet in length; the greater lengths being made up by stringing two or more torpedoes together.

Speedier Drilling

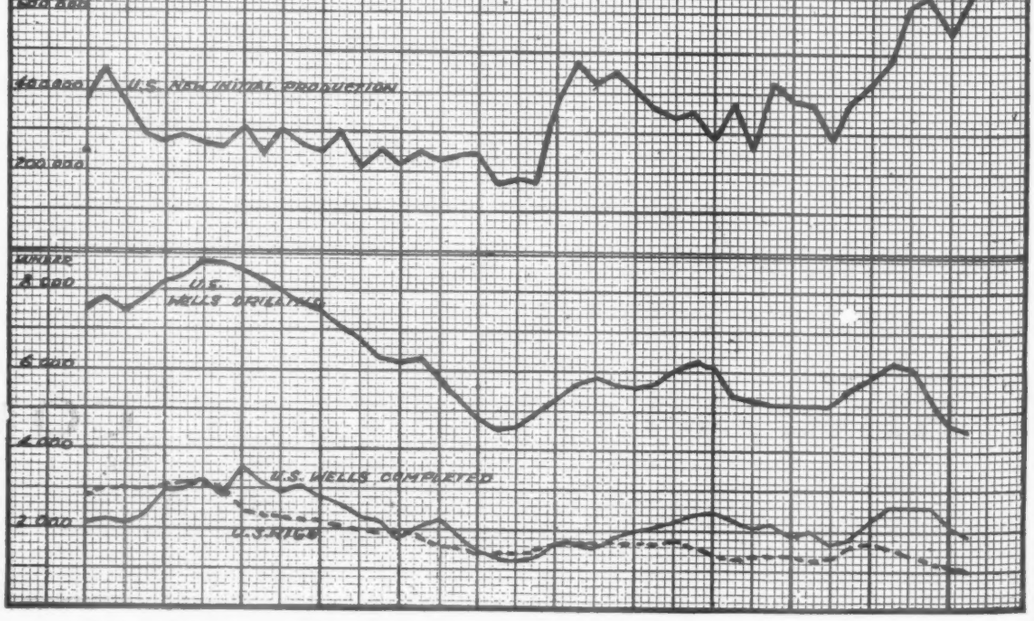
In an interesting article on methods of rotary drilling in southern California, Arthur Moore says in London Oil News that the modern tendency appears to be to make the rigs heavier and stronger than ever, so as to given even greater drilling speeds. Thus a new "twin" engine, 12x12 inches, is coming onto the market; this will necessitate stronger shafts, sprockets and chains to transmit the extra power. The line and drum shafts at present in use on the heavy rigs are 5⅞ inches in diameter, and the chains are 1,240 and 1,030, the latter being used to drive the "table."

The speed of the table has been increased until 120 r.p.m. with a fishtail is quite common; some drillers run even faster than this, and it would be interseting to compare their progress with that of those who run at a more moderate pace. One thing is certain, however, and that is, speed of drilling is not everything, particularly in soft formations, as they cannot be "mudded" as quickly as they are drilled; caves result if the drill is pushed too fast ahead of mud absorption, and these caves cause "bridges," and still further caves, as the overhanging wall has a greater readiness to fall in than a perpendicular one.

Drill pipe is now made exclusively with an internal upset at the thread, but "twist-offs" still occur, both at the upset portion and in the barrel.

Wells are being drilled deeper, the Santa Fe Springs Pool having a number

(Continued on Page 90)



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Exploration Plans for Coming Year

Wildcatters, Expecting Better Conditions in 1924, Preparing to Resume Their Useful Avocation in Widely Scattered Places

By James McIntyre

Where will the next big pool be opened? This question has been asked from time to time ever since the production of oil became an established business and the marketing of crude products began to take its place among the important industries.

The steady increase in the consumption of refined oil products has always kept the producer on the jump to supply the demand for crude. Some years have seen him well ahead of the consumer, but in others he has lagged behind so far that it was necessary for the refiner to go to Mexico for sufficient crude to make up the deficiency.

In the present year big fields in California, Texas and Oklahoma the results of wildcatting of previous years, flooded the market with crude to such a degree as to put a stop to most of the strictly wildcat drilling in practically every oil producing State.

The closing weeks of the year, however, find most of these big fields declining in production and wildcatters are commencing to make plans for the coming year. They hope to find business in such a state that they will be justified in completing what they have started and in beginning new work in places more or less removed from the defined oil pools.

Exploring Oklahoma

The biggest wildcat campaign in Oklahoma in the coming year will be carried on in Seminole, Pottawatomie and southern Lincoln counties with the Big Canadian River as the generally accepted stopping point. There will be more or less work in Pontotoc County, which lies south of the river, but it will not compare with the amount of exploration that will be carried on in the other counties named. In the western part of the State the greatest amount of wildcat drilling is expected in Grant, Wood and Alfalfa counties with considerable drilling in the territory cornered by Garfield, Noble, Payne and Logan counties. There are many large blocks of leases in the western half of the State owned by the larger companies for protection, but on which no work is expected next year unless some independent wildcatter develops production close by.

The land departments of the larger companies have been buying few Oklahoma or Kansas leases this year, but it seems that by general consent they will start buying with the opening of the new year. It has usually been the rule in Oklahoma that when the Standard companies commence buying the others, from the big independents down to the individuals of moderate means, follow suit, just as all quit buying when the Standard companies go out of the lease market. Of late the only Standard companies in the market for leases have been those connected with the Standard Oil Co. of Indiana, the Mutual Oil Co. and the Dixie Oil Co. They are new in this field and eager to get a foot hold, but even their buying has been subnormal.

It has been a lean year for lease brokers and when the buying season opens they will have accumulated a stock of "good looking propositions" sufficient to overwhelm the lease buyers.

Expensive Drilling

Nearly all the contemplated wildcat operations will be in deep territory, where the cost of drilling to the depths where sands are looked for will be great, and 3,500 and 4,000-foot wells will not be uncommon.

There are 14 tests going down in Grant County in scattered townships even now. Nothing has yet been started in Wood or Alfalfa County and may not be until next spring, but both those counties are scheduled for exploration.

Lincoln County, which has been persistently explored for years with only enough results to tantalize operators into keeping on after repeated failures will be given even a more thorough going over than before, according to plans. Nearly a score of tests are under way in 10 townships in that county now. Lincoln is one of those countines that oil men persist in looking upon as potential oil country, and they have always been willing to back their opinion with their money, notwithstanding numerous failures to find more than good gas showings and small showings of oil.

Wildcats in Many Counties

At the present time there are wildcat tests (although many of them are shut down), in Greer, Grant, Woodward, Woods, Logan, Lincoln, Dewey, Kingfisher, Cherokee, Coal, Blaine, Canadian, Custer, Pittsburg, Roger Mills, Harmon, Oklahoma, Washita, Cleveland, Sequoyah, Grady, Beckham, Caddo, Kiowa, McClain, Pontotoc, Garvin, Comanche, Cimmaron, Beaver, Texas, Coal and Pushmataha counties, while many outside locations in Creek, Kay, Garfield, Noble, Payne, Okfuskee, Hughes, McIntosh and Seminole counties are being drilled.

Many of the wells in the counties considerably removed from production have been shut down on account of market conditions but a large proportion of them will resume operations as soon as the state of the trade warrants it.

In the southern end of the State there are no outstanding structures that are promised exploration, but work already started in Atoka, Jefferson, Johnston, Marshall, McCurtain, Bryan, Love, Choctaw, Tillman, Carter and Stephens counties will be carried over into next year's operations.

Plans for Work in Kansas

In Kansas, Cowley, Sumner and Harper counties will receive the most attention outside of the counties definitely known as oil country. Sumner County has been checkerboarded by big oil companies and Harper County is promised some exploration. Reno County also will be given practical consideration in the coming year. Kansas does not hold out the promise for new fields that Oklahoma does. A considerable percentage of the wildcats in outside counties are shut down at depths which make them look like failures already. Sumner County at this time has seven wildcats started, but one late completion showed salt water at 3,300 feet and another was abandoned at 3,790 feet after drilling into the Mississippi lime 380 feet and finding no breaks.

A Field of Great Expectations

Many operators persist in the belief that in the Panhandle of Texas between Beckham and Roger Mills counties in Oklahoma westward to Amarillo will be found the next great Mid-Continent Field. Practically every big company operating in Texas and several prominent Oklahoma companies own large blocks of leases in that part of the State but they are not encouraging operations. The general understanding seems to be that the Panhandle is a good place to stay out of until there is a need for petroleum, because if it is not a false alarm it will be an oil producer of such proportions as to preclude all hope of an equilibrium between production and consumption, at present so much desired.

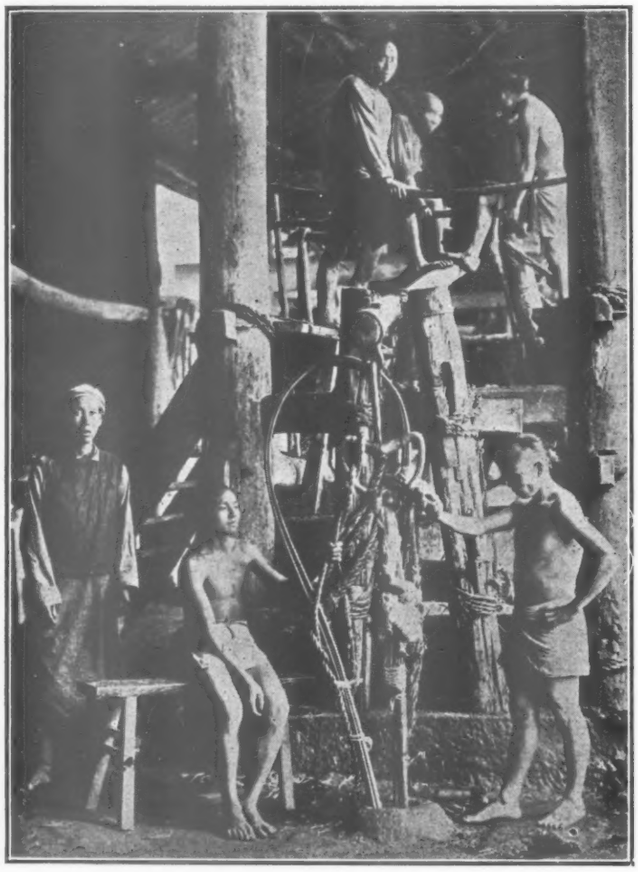
Big Program in Louisiana and Arkansas

Interviews with a majority of the representatives of active operators in the North Louisiana-South Arkansas territory bring out the fact that the year 1924 will witness one of the most extensive wildcat drilling campaigns ever conducted in that territory.

A number of the largest companies who specialize in wildcat development are blocking up acreage wherever their geologists can define a structure and free lances are having no difficulty in dispo-

(Continued on Page 114)

CHINESE CREW BUSILY MAKING HOLE



—Intl. Photo.

Courtesy "The Columbian Crew"

Well drillers in the United States, enjoying the advantages of modern rigs, cables, etc., certainly will not envy the Chinese drillers who operate their rigs by man power in the antiquated fashion of the old tread-mill.

The principles of drilling salt wells, as employed by the Chinese, are basically the same as those used in drilling for oil in this country, although our methods and equipment are far in advance of the Orientals'.

At Tzuliutsing, in the Province of Szechuen, China, there are between five and ten thousand salt wells in daily operation. The industry has flourished for centuries in this city of a million inhabitants, it being described in provincial histories as far back as a thousand years ago.

Much of the drilling equipment now used is similar to that in use when the wells were first worked, yet the results are quite satisfactory as labor is very cheap. Some of these salt wells sunk to a depth of 4,000 feet, several years of manual labor being required to attain this depth.

The brine is brought to the surface in a bailer attached to a long rope which is wound around a large bamboo drum, usually about 18 feet in circumference. Winding power for this operation is unique, in that it is supplied by buffalo. The heavy brine-laden bailer requires from 15 to 20 minutes to be brought to the surface, and the contents are released through a bamboo tube to the evaporation house. The fluid is then poured into large pans where it is boiled to evaporate the water, leaving the salt deposit in the pans.

It has been estimated that the Tzuliutsing district has a daily production of about 6,000 tons of salt, which makes one wonder where it all goes.

In place of a manila drilling cable, the Chinese use a "rope" consisting of several layers of bamboo strapped together, the length being increased as the bit cuts deeper.

Truly, the Chinese are a stolid race, possessing great patience!

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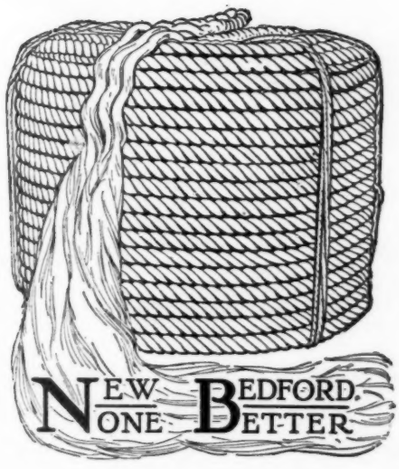

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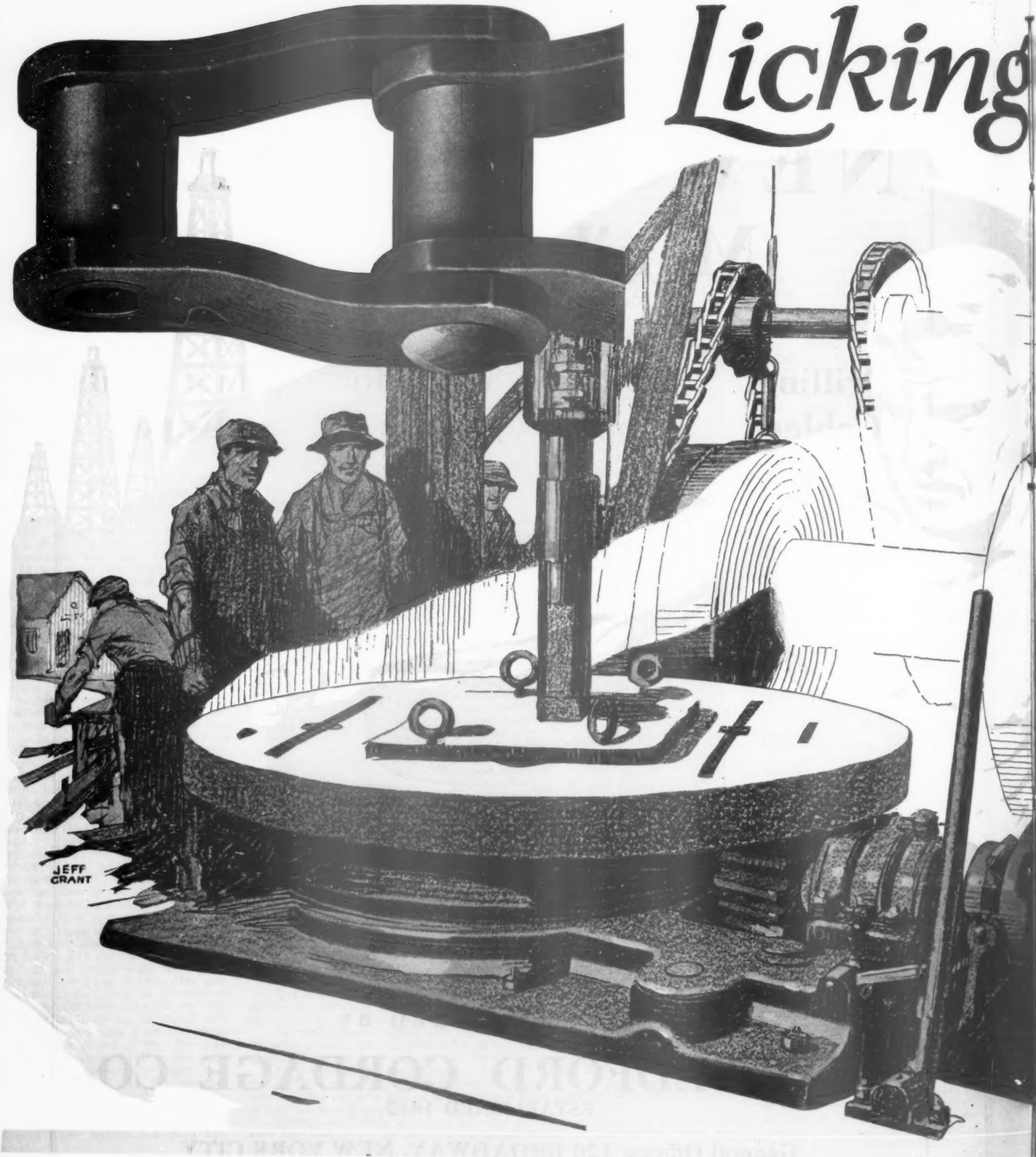

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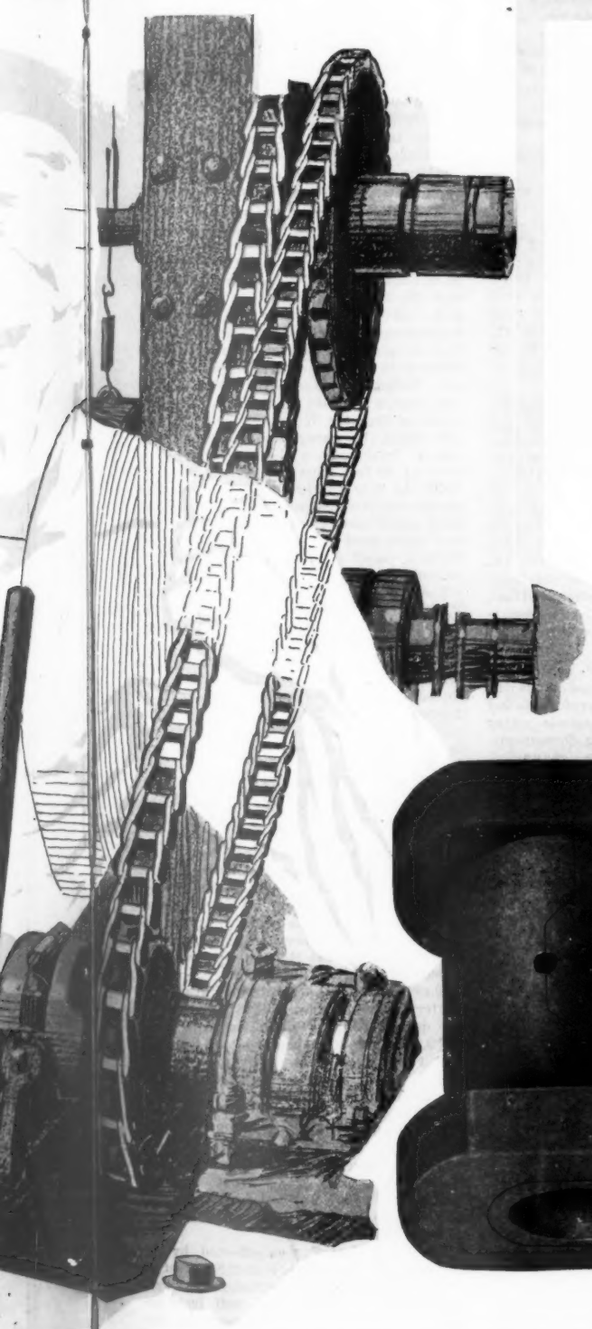

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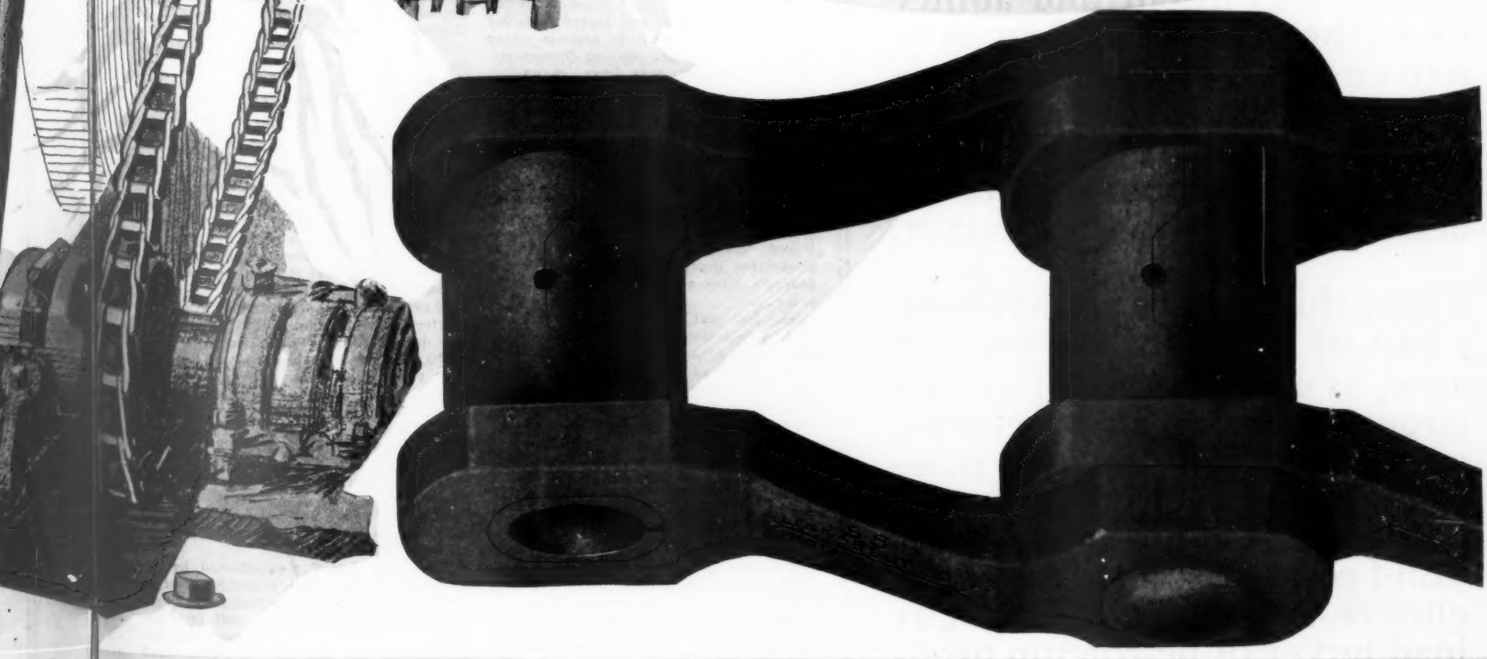

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RECOVERING OIL BY PERFORATION; RIPPING CASING FOUND EFFECTIVE

By H. A. Godde
Petroleum Engineer

Several wells drilled in undeveloped areas of the Midway and Sunset oil fields, or in areas where definite correlation was not possible, have failed to obtain production after cementing the water string above what was considered to be the productive oil measures. The fact that the water string was cemented too low, can be attributed to one of the following conditions:

Uncertainty of the correlation.

Failure to sample the mud returns at regular intervals.

Possibility of obtaining larger production at a greater depth.

Close proxmity of oil sand to water sand, as in the Maricopa Flat.

Later development afforded a more definite correlation of oil sands and bailing tests showed that productive oil-bearing formations did not exist below the shoe of the water string. The wells were then placed on production by plugging bottom, perforating or ripping the water string, and breaking up the cement collar opposite the productive oil sands, see Fig. 1.

This method of obtaining production is not recommended for new wells, but may be used as a last resort to determine the presence or absence of oil or gas. In order to obtain clean production it is essential that the cement job be effective above the perforations. This condition can exist as high as 208 feet above the shoe of the water string, as is noted later under discussion of Balboa Oil Co. well No. 1. The possibility of obtaining water, after perforating, instead of oil, is always present, but does not necessarily condemn the formations tested, for the following reasons:

1. The cement introduced behind the water string may have filled a cavity near the shoe joint and therefore failed to reach high enough to exclude water from the oil or gas bearing formations.
2. The cement may have channeled, due to crooked hole or admixture of shale, so that water would have access to the area to be tested.
3. The upper portion of the cement, which performs the work of cleaning the hole, may have gathered so many impurities that it failed to be impervious to water.
4. Gas present in the formations to be tested may have agitated the cement above that depth so that it failed to set properly, thus allowing water to migrate below.

The fact that some wells have obtained clean production from behind the water string indicates that in those cases the cement did not penetrate the oil sands to such an extent that production could not be obtained but excluded water from above that depth. It is a fact worthy of note that of the six instances cited below, three of the water strings were cemented in holes drilled with rotary and three holes drilled with cable tools. In one of the three holes drilled with rotary tools circulation of mud fluid was required prior to cementing the water string, and in two of the holes drilled with cable tools pressure mudding was required.

After the hole is plugged to the desired depth the water string may be perforated, ripped or shot, in order to open the well to formation. Perforating, as a general rule, is insufficient to break up the cement collar around the casing and therefore fluid may not have access to the hole. The best results have been obtained by ripping the casing with short slots from 6 inches to 2 feet in length. The length of the blade to be used on the ripper depends on the thickness of the cement collar around the casing. Shooting should not be resorted to unless ripping fails to allow fluid to enter or unless the oil bearing formations are hard.

The usual practice of starting production cannot be used for the reason that the pipe cannot be moved and circulation against the walls of the hole cannot be obtained. One, or a combination of the the following methods may be used: Bailing, swabbing, washing perforations, or flooding oil sands with oil or water. If no fluid whatever is obtained, indications are that the cement collar has not been penetrated or that the formations opposite the perforations are barren. It is then necessary to reperforate or extend the perforations until fluid or gas enters the well.

Instances Cited

The following instances are cited where clean production has been obtained after perforating the water string:

Pacific Oil Co.'s well No. 2139, Section 5, Township 11n, Range 23w, S. B. B. and M., Sunset oil field.

A water shutoff was obtained by cementing 8¼-inch casing at 2,680 feet in a hole drilled with cable tools. After drilling to a depth of 2,785 feet, the hole was bailed dry; and after standing several hours no fluid entered the well, indicating that the Kinsey sand was cased off behind the water string together with upper intermediate (salty), having a level of 60 feet from the derrick floor. In 1922 the hole was bridged below the shoe of the 8¼-inch casing, which was ripped with small slots from 2,660 to 2,680 feet and perforated from 2,649 to 2,660 feet. Only a small production of oil was obtained; therefore, the 8¼-inch casing was ripped with small slots from 2,645 to 2,660 feet, which evidently broke the cement collar and opened the well to production. The well has produced practically clean oil since perforating the water string and during June, 1923, produced at the average daily rate of 106 barrel of oil and 3 barrels of water. This well, at the present time, is one of the largest producers from the Kinsey sand in this field.

Pacific Oil Co.'s well No. 25, Section 5, Township 11n, Range 23w, S. B. B. and M., Sunset oil field, one location south of well No. 2139.

A water shutoff was obtained by cementing 6¼-inch casing at 3,004 feet in a hole drilled with cable tools. After drilling to the tar sand an attempt was made to produce the well, resulting in the production of heavy oil and no water. This indicated that the Kinsey sand was cased off behind the water string together with the upper intermediate water (salty), having a level of 30 feet below the derrick floor. During May and June, 1919, the hole was bridged to 2,975 feet and the 6-inch casing was ripped with short rips, 2 to 3 feet long, from 2,940 to 2,965 feet. Production records show that the well has produced practically clean oil and during June, 1923, produced at the average daily rate of 77 barrels of oil and 1 barrel of water.

Lake View No. 2 Oil Co., well No. "Midway Fields" 2, Section 4, Township 11n, Range 23w, S. B. B. and M., Sunset oil field.

A water shutoff was effected by cementing 6¼-inch casing at 2,813 feet in a hole drilled with cable tools. An effort was made to produce the well from below 2,813 feet, but only heavy oil was obtained, indicating that the Kinsey sand was cased off behind the 6¼-inch casing together with the upper intermediate water (salty), having a level of 330 feet below the derrick floor. The hole was plugged to 2,808 feet with cement and the 6¼-inch casing was ripped from 2,794 to 2,807 feet, but production was not obtained. The 6¼-inch casing was then ripped from 2,773 to 2,774 feet, 6 inches, 2,778 to 2,780 feet, 2,784 to 2,785 feet, and shot from 2,784 to 2,785 feet 6 inches and production was obtained. The well produced practically clean oil from June 18, 1922, to April, 1923. Water

then broke in and redrilled operations showed that upper intermediate water was only 30 feet above the Kinsey sand.

Pacific Oil Co.'s well No. 202, Section 31, Township 12n, Range 23w, S. B. B. and M., Sunset oil field.

A water shutoff was obtained by cementing 12½-inch casing at 1,914 feet in a hole drilled with rotary tools. Production was not obtained below that depth, indicating the top oil was cased off together with top water, having a level of about 400 feet below the derrick floor. The hole was plugged to 1,970 feet and the 12½-inch casing was perforated from 1,905 to 1,880 feet with three rows of ½-inch x 1-inch holes, 8-inch centers. Although the well has never produced a large amount of oil, the average amount of water produced has rarely exceeded a few barrels a day.

Midway Field Tests

Balboa Oil Co.'s well No. 1, Section 24, Township 31s, Range 23e, M. D. B. and M., Midway oil field.

A water shutoff was obtained by cementing 8-inch casing at 2,908 feet in a hole drilled with rotary tools. Several showings of oil and gas were noted above the shoe of the water string. Production was not obtained below 2,908 feet, and the hole was plugged with cement to 2,852 feet. The 8¼-inch casing was perforated from 2,700 to 2,815 feet with

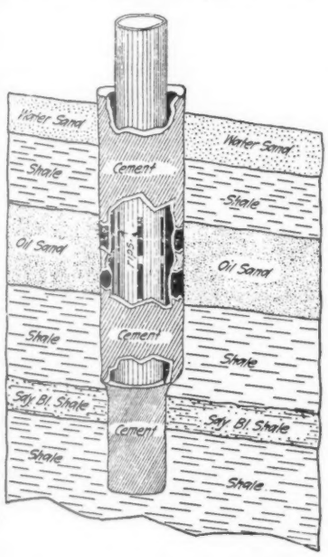


Diagram of portion of well after plugging bottom and ripping the water string. The cement collar above the oil sand excludes water from the oil measures. The ripper not only cuts the casing but also penetrates the cement collar, thus allowing oil to enter the well.

three rows of ⅝-inch x 1⅜-inch holes, 7-inch centers, and from 2,720 to 2,770 feet with one row of ½-inch x 1-inch holes, but satisfactory production was not obtained. The 8¼-inch casing was ripped from 2,756 to 2,815 feet with ½-inch x 1-foot slots every other foot, and from 2,700 to 2,753 feet with ¾-inch x 1-foot slots every other foot, after which satisfactory production was obtained. It is to be noted that the top of the rips is 208 feet above the shoe of the 8¼-inch casing. The well produces less than 1 barrel of water per day.

Pacific Oil Co.'s well No. 32, Section 19, Township 32s, Range 24e, M. D. B. and M., Midway oil field.

A wattr shutoff was obtained by cementing the 10-inch casing at 3,020 feet, in a hole drilled with rotary tools, below a sand which was thought to be water-bearing. At a later date it was demonstrated that this sand was productive in an adjoining well. The 10-inch casing was perforated but no production was obtained because the cement collar around the casing had not been penetrated. The casing was then ripped with 6-inch slots from 2,975 to 2,995 feet, and the well flowed clean oil for a short time. The well has produced only a few barrels of water per day, and in January, 1922 (last production), produced at the average daily rate of 24 barrels of oil and 2 barrels of water.

BRITISH TO CONTROL

Questions have been asked in the British House of Commons concerning the concession under which a British subsidiary of a large American corporation controls the asphalt lake on the island of Trinidad, off the coast of Venezuela. This concession, which runs until 1930, pays the British Government £10,000 a year. It appears that British interests desire to work the deposit after the present concession expires.

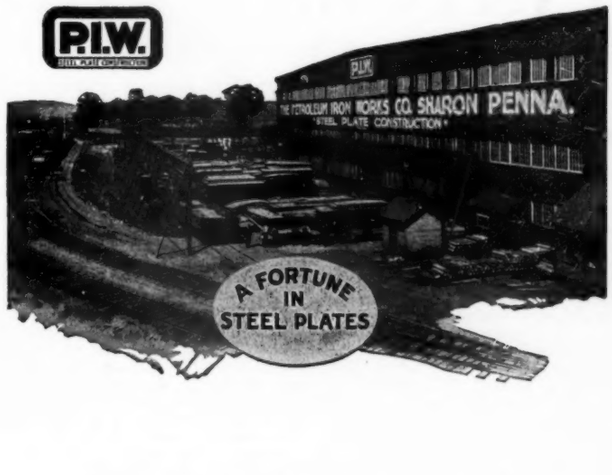
Trinidad's pitch lake, although neither the largest nor purest of the world's asphalt deposits, is the best known. Approximately 114 acres in extent and 80 feet deep, it occupies the saucerlike crater of an extinct mud volcano which is estimated to contain 6,000,000 tons of asphalt. One of its advantages over other sources of supply is that the surface of the asphalt is sufficiently firm to sustain men, horses and wagons, yet plastic enough so that excavations are filled and leveled within a few months. A slight railroad has been laid over the lake upon a cushion of palm leaves placed between the ties and the pitch surface. This remarkable lake for many years has provided much of the asphalt used in the United States for highway surfacing. However, other asphalt deposits are now being worked, so that restriction of Trinidad supplies after 1930 would not work serious hardship upon this country.

CLUB TO URGE OIL FOR HEAT

NEW YORK, Nov. 26.—Plans for the formation of a club having for its chief purpose the coordination of the new industry developed by the increasing use of fuel oil for house heating were indorsed at a meeting of more than a hundred representatives of the oil industry, combustion engineers, burner manufacturers and architects held in the Reform Club. Among the speakers were Neil Smith, architect, who pointed out the confusion caused by the diversity of selling literature put out by the various burner concerns and urged that these circulars be standardized for distribution to architects and others who might influence the selection of heating apparatus. Mr. Lobell, head of Combustion Utilities Co., said there were more than 1,500 different types of burner on the market, many of inferior quality and suggested that the making of the latter be discouraged. He suggested the possibility of developing burners so efficient that 110 gallons of fuel oil distillate, costing $7.70 at current quotations, would be the equivalent in heat efficiency of a ton of anthracite costing $13 to $16.

SIAMS OIL TOO EXPENSIVE

The question of finding oil in Siam has been one of prime importance for some time and a geologist was employed by the Government to investigate the possibilities. A publication in English, entitled "Reconnaissance Geological Report of the districts of Payap and Maharashtra, Northern Siam," was recently published, giving the results of his survey, the first really scientific investigation of the matter. The report, however, is not optimistic, the geologist stating that two hypotheses have been formed, and in both there is a possibility that petroleum escaping upward through the alluvium may have accumulated in some wedge-shaped stratum or behind an impervious barrier in the basis in sufficient quantity to insure an oil field. Both the program, however, would be extremely expensive in view of remoteness of the field and, on account of the speculative character of the results, cannnot be considered feasible.



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NATURAL GAS DEVELOPMENTS

W. Va. Gas Appeal Is Re-Argued Before U. S. Supreme Court

WASHINGTON, D. C., Nov. 24.—The celebrated West Virginia natural gas case, described as vitally affecting 650 cities and towns in Ohio, Pennsylvania, Indiana, Kentucky and Maryland, and 7,000,000 residents of West Virginia and neighboring States, was argued for the fourth time before the supreme court.

Focusing the attention of the court upon a map of the Ohio Valley, John W. Davis, in opening the argument for Ohio and Pennsylvania, declared the valley an economic unit so far as natural gas is concerned with pipe lines running without regard to State lines. It was impossible to interpose any artificial obstacle to the flow of gas in interstate commerce, he insisted, explaining the gas must flow night and day, after entering the pipes, until it is consumed.

The West Virginia law complained of, Mr. Davis argued, would have the effect of placing a complete embargo upon the shipment of gas out of the State. Ohio and Pennsylvania claimed the right, he said, to obtain at the receiving end of the pipe lines the gas which they had contracted for and which had entered interstate commerce. Analyzing the grounds urged by West Virginia for reopening the case, Mr. Davis asserted that there had been no showing made sufficient to lead the court to set aside or modify its former decision.

Replying for West Virginia, H. P. Steptoe, contended that the State would be helpless to protect itself against the exportation into neighboring States of its entire output of natural gas unless the court reversed its position.

Any increase in the consumption of natural gas in West Virginia followed by a reduction in the quantity of gas sent out of the State would, under the contention of Pennsylvania and Ohio, constitute a restraint of interstate commerce, G. M. Hoffheimer asserted in closing the argument for West Virginia. Under the construction placed by Ohio and Pennsylvania upon the supreme court decision in the case last June, West Virginia would be without power, he insisted, to restrain any portion of her natural gas for her own use.

There are more than 60 corporations engaged in strictly State distribution of natural gas, he said, sending none into adjoining States. These, he contended, could not be prevented by West Virginia under the court's decision from sending their entire output outside the State.

That congress had not given the interstate commerce commission jurisdiction over natural gas pipelines indicated, he declared, that it was the intention of congress that the regulations of such companies should remain with the States.

Unless restrained by the courts West Virginia will directly interfere with the free flow of natural gas in interstate commerce, George E. Alter, former attorney general of Pennsylvania, declared in closing the argument for that State.

BAN ROTARY IN BECKHAM

Use of rotary rigs for drilling through gas and oil sands in the Sayre oil field in Beckham County, has been prohibited by an order handed down by the State Corporation Commission. Only the standard rig may be used. The order further requires that the casing above the oil and gas sands must be cemented thoroughly to shut off all water from overlying strata. This must be allowed to set 10 days before operations may be continued.

The order governing the Sayre Field is similar to the one governing the Comanche and Duncan Field in Stephens County, which was given out by the Commission in 1920.

FORT COLLINS, COLO., GAS WELL MEASURES 80,000,000 FEET DAILY

By F. B. Taylor

CASPER, Wyo., Nov. 24.—The gas well at Wellington, Colo., about 14 miles north of Fort Collins, drilled by the Union Oil Co. of California, is the center of interest in the Rocky Mountain region. The well has been measured by the United States Bureau of Mines and its flow is placed at 80,000,000 feet daily.

The force of the gas flow tore down the derrick by splintering the legs and this accident prevented the work of getting the big well under control as had been expected. The equipment of valves and other material is on the ground ready for obtaining control of the big well and as soon as the debris of the derrick is out of the way, the crew will start in on that work.

This well is 4,285 feet deep and takes it gas flow from the Frontier formation of the Cretaceous, though some geologists state the flow is coming from the lower Cretaceous or about the Dakota formation. Whichever it is, the well is certainly putting out a great volume of gas and is a very important strike to the inhabitants of northern Colorado towns and cities.

The statements of officials of the Union Oil Co. do not give any hint as to what the gas from the well will be used for. It can be piped at small expense to nearby cities, or it could be utilized for carbon black and the extraction of gasoline on the premises. In either use it is likely that a gasoline extraction plant will be placed. With the city of Denver only about 80 miles away and many cities lying between the well and Denver, this market is most feasible to the casual observers.

Besides the Wellington structure on which the gas well is located, there are several other structures nearby, notably the Bee Lake Dome, Fort Collins Dome, Douglas Dome and others. These structures have not been tested in the deep sand that contains the gas in the Union well and it is now considered these other structures will give gas also or possibly oil, upon being drilled. One of the main questions now in the minds of the operators interested in holdings near the big gas well, is the staying power of this strike. So far it has shown no signs of dwindling, but it has hardly had a chance yet to do so, even if it is only fed from a small pool.

Besides the cities in Colorado, Cheyenne, Wyo., also appears interested in the new gasser because it lies only 24 miles from that city and Cheyenne has no gas supply at present, the nearest gas fields in Wyoming lying across ranges of mountains that prevent the laying of pipe lines. Fort Collins and other nearby cities are starting booms on the strength of the well and one refinery is being promoted, though where the refinery is to obtain its crude is not stated, but the supposition is that an oil field is to follow the strike of gas.

The well of the Hatfield Oil Co. which also found gas near Rawlins, Wyo., is spraying a condensate naphtha that makes this strike look good as a producer of gasoline. In the Lost Soldier Field on the Wertz Dome, the Producers & Refiners found a very wet gas in the wells there that is exceptionally good for use in cars or airplanes and this product has been specified for use in the Government mail planes so it would not be unusual for the Hatfield well to find a like gas.

The Hatfield well is on the Eight Mile Lake structure and the gas is coming from the Dakota sand at 3,954 feet, the flow is estimated at 20,000,000 feet and the Bureau of Mines is checking the log and flow. This dome lies about 10 miles south of Rawlins, in Carbon County.

FLAT RATE OF $1 PER 1,000 FEET

The Central National Gas Co. has applied to the California State Railroad Commission for authority to sell and Western States Gas & Electric Co. to purchase, the gas wells and distributing system of the former, for the sum of $85,000. The Western States Gas & Electric Co. also asks authority of the Railroad Commission to substitute the existing rates of the former for the present flat rate of $1 for 1,000 feet of gas charged by the Central Natural Gas Company.

PAPER-WRAPPED PIPE

A crew composed of 22 men is laying pipe which will insure a gas supply for Calwa, Calif. within a short time. The work was started in July but operations were halted for some time due to shortage of pipe. The material being used is pipe specially wrapped with paper which, it is thought will prove more durable than tar covered pipe. The line will be composed of 22,287 feet of 2 and 4-inch pipe when completed, the large size being used for transmission and the smaller lines for distribution.

WAGONER GAS RATE IS LIKELY TO GO UP

WAGONER, Okla., Nov. 26.—In view of the maneuvers of the M. T. C. Gas Co., the indications are that the gas rate may jump from 50 cents to 65 cents per thousand feet. The M. T. C. company is operating under a receivership under the jurisdiction of Federal Judge R. L. Williams.

This company has reports to show that in the last nine months it lost $1,000 by supplying gas to the local gas company at 14 cents per thousand feet. If that showing can be substantiated, and an audit of the books has been ordered. Judge Williams will give them permission to cut off the local distributing company, which will mean that it will have to pay 20 cents for gas at its receiving station. The local company will then have to go before the Corporation Commission and ask for an increase in its charge to the everyday citizen in order to keep from going broke. The Corporation Commission intervened in the Federal suit, and asked for an audit of the books. The local company has a leakage of 61 per cent, it is claimed, which may interfere with its success before the Corporation Commission.

The receipts for the nine months of the M. T. C. company were $55,000 and its cost of gas alone amounted to $29,000, leaving $26,000 to cover operating expenses and profit. It is claimed it required $1,000 more than that sum to operate the business.

Method to Estimate Total and Annual Production of Wells

By T. H. Kerr and C. C. Phillips
Of the Ohio Fuel Gas Co. in Natural Gas

Being required, for purposes of valuation, to estimate the yearly and total production of gas wells during their life, where the open flow only was available, the writers devised the following method of estimating, based on the performance of adjacent measured wells covering a corresponding interval.

The entire producing territory involved was divided into geographical districts. Each district is bounded so as to include all wells producing from a given sand in that district.

A careful examination was made of all measured producing wells in a given district and a selection was made of all such, where the total production was covered by an accurate measurement. The initial open flow record, together with the initial and monthly measured production of these representative wells within each district was used to construct a series of decline curves based on the monthly production in per cent of the initial open flow. From this, a mean decline curve for each such district was drawn. This curve was read and the readings, in per cent of the initial open flow, were tabulated in three columns; the first column indicating the per cent of initial open flow produced each month; the second, the total accumulated production in per cent of the initial open flow, and the third and last column, the total accumulated production in per cent of the initial open flow for any 12 months ending on a given date.

This tabulation was necessary in order to determine the amount produced by wells completed at different times during the calendar year. After the end of the calendar year, during which a given well was completed, the increase in accumulated production for the following 12 months represents the per cent of initial open flow production delivered during the second calendar year. With the aid of this curve and tabulated per cents of initial open flow, it is only necessary to know; first, the district in which a given well is located; second, the intial open flow, and third, the date of completion, in order to determine the probable production of the well while working continuously under the same average conditions; provided, of course, that the wells were all completed during approximately the same stage of development.

CANADIAN CO'S FINANCES

An increase in revenues for the fiscal year ending September 30, is reported by the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary, Alta. The gross revenue for the year was $1,215,806, compared with $1,114,112 for the previous year. The sum of $540,606 is applied to the reserve for depreciation and depletion, against $519,442 for the previous year. The number of customers was somewhat higher, at 12,566, against 12,318 last year. The total consumption of gas was 1,965,575 feet, being 89,564,000 feet less than the previous year. The balance sheet indicates the loss for the last fiscal year amounted to $315,466, which, added to the debit balance of $244,252 at the close of the previous year brings the total deficit to $559,719. Depreciation reserve stands at $3,448,476.

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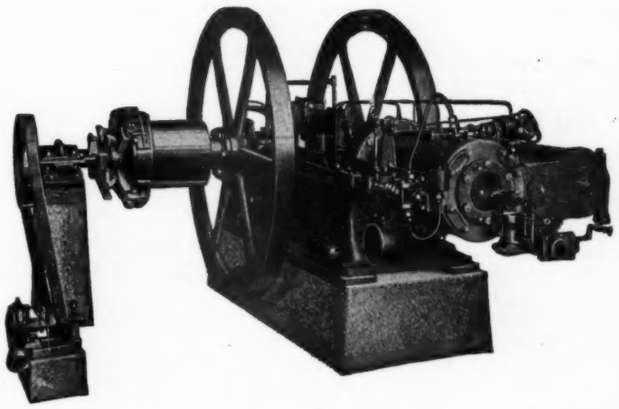

All its parts except the cylinder and oil pump are the same as the Reid gas engine and its working principles are very similar. The oil country is full of pumpers who are running and are familiar with Reid gas engines. This makes it easy to find a man who will readily learn to handle this oil engine. So many of its parts being the same as the gas engine makes it convenient to get spare parts when needed in the field. A Reid gas engine can be converted to an oil engine by replacing the gas cylinder with an oil cylinder and using a smaller pulley. A Reid oil engine can be changed to gas by replacing oil cylinder with a gas cylinder and using a larger pulley. ¶It is reliable, has lots of power and the usual Reid quality of material and workmanship. Let us tell you more about it.

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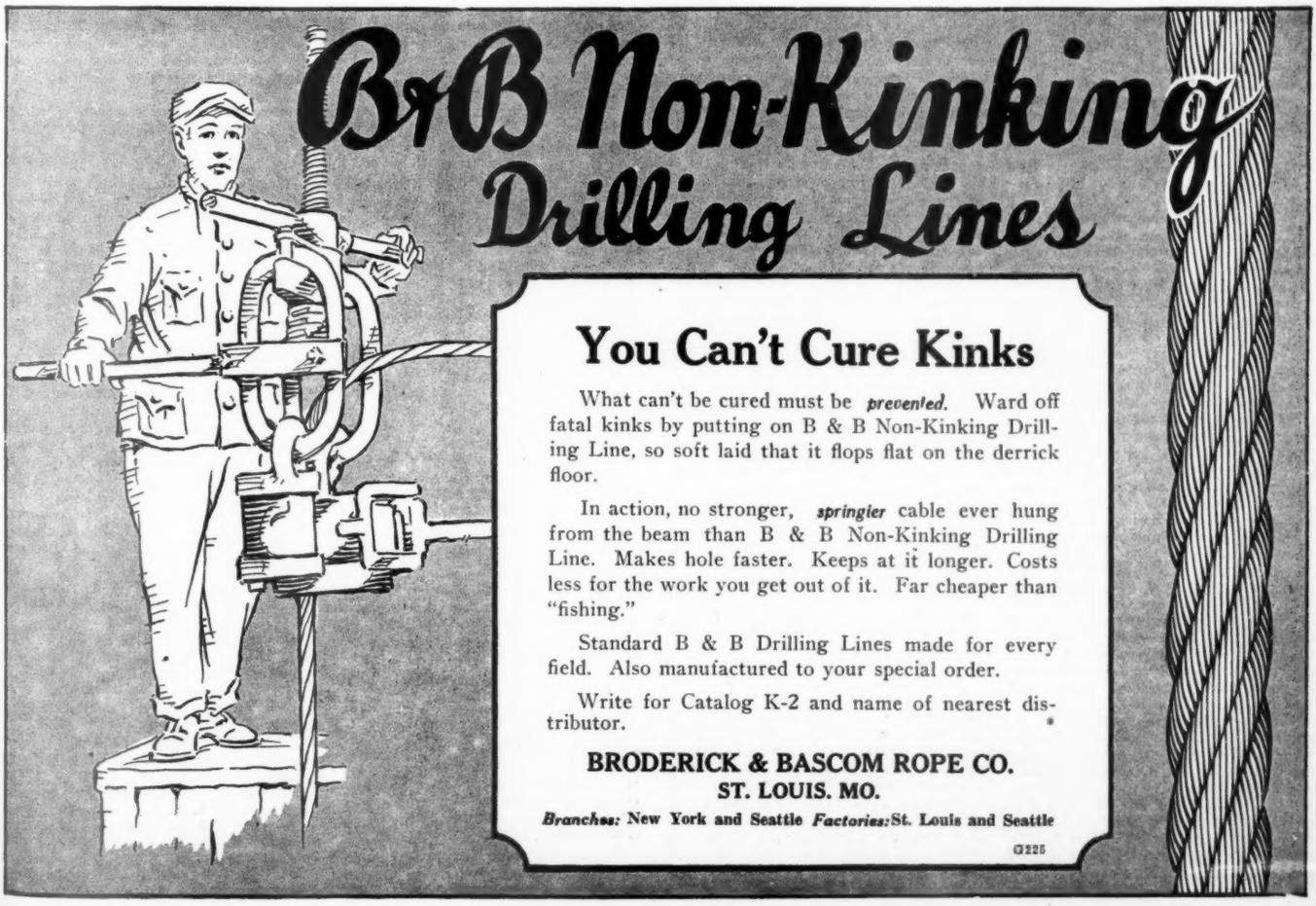
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EQUIPMENT AND SUPPLIES

Fire and Evaporation Cost $100,000,000 Oil Loss Annually

The Columbian Steel Tank Co., of Kansas City, manufacturers of tank equipment and supplies, has issued an interesting pamphlet on floating tank decks and the prevention of oil tank fires and evaporation.

"One hundred million dollars in oil is lost annually from fire and evaporation —a preventable waste," according to this booklet. "And $100,000,000 is a very conservative estimate..... That is the annual, direct loss to the oil industry figured at average prices within the industry at the different stages from well to distributing station.

"There can be little doubt that the loss by fire in oil and property amounts to a fourth of this great total each year. The rate at which crude evaporates during its journey from the well, through flow tank, lease tank, pipe line and tank farm and until delivery to the refiner has been closely calculated at from 4 to 5 per cent. There are thousands of large tanks in this country of the 27,500 to 80,000-barrel sizes. There are thousands and thousands of smaller tanks dotting the country everywhere. So it is not difficult to see that an estimated evaporation loss of $75,000,000 annually is extremely conservative.

"Crude oil is a mixture of fluids, and the more volatile portions vaporize first. In tank evaporation, it is gasoline that escapes. Were greater heat applied than sun heat, about the same action would result as in a topping still. After the gasoline, the next heavier fraction, the kerosene, would evaporate. Therefore, it is readily seen that two factors combine to cause evaporation—heat, which vaporizes the volatile fractions in their order, and air, which absorbs the vapor as it arises from the surface. The elimination of one or the other of these contributing forces would virtually remove the cause of evaporation.

Varying Temperatures

"It is a foregone conclusion that varying temperatures canont be eliminated. Petroleum in its crude state, or even in its lighter fractions, such as gasoline and kerosene, is not inflammable while it is entirely in its liquid form..... When properly vaporized and mixed with air, the heavier fractions of crude, such as fuel oil and distillate, are rendered easily combustible. Witness the oil burner.

"A tank of oil can only be ignited in its vapor area, i. e., the area where the surface of the oil comes in contact with air and, by reason of this exposure, saturates the air with gaseous vapor. Very little vapor may be mixing with the air, yet it is inflammable in the smallest quantities and once ignited it mechanically generates more and more vapor by its own heat.

"Consequently, it is apparent that oil tank fires and oil tank evaporation have their origin in the same area, the area where the oil is exposed to the air. It must, therefore, necessarily follow that the prevention of this exposure of oil to air removes the cause of evaporation and fire and their attendant waste and hazards."

Adjustable Roof

The critical need of lessening the tremendous losses due to these agencies led to the invention, after years of research, of the new safety roof which can be adjusted to fit any oil tank. It is said to be fireproof, lightning proof and evaporation proof, and consists of a floating cover, the circumference of which is built slightly smaller than that of the tank it is designed to fit. This floating roof rests on the surface of the oil so no air may intervene between that surface and the roof. Surrounding the floating roof and lying against the wall of the tank is a gravel "seal," which fills in the space between the rim of the roof and the tank, and automatically adjusts itself to the irregularities of the tank. This seal has a deck that turns rainfall onto the main roof, where pipes drain it off.

NEW SALES MANAGER HAS MUCH EXPERIENCE

Roy Muir Ellis, A. S. M. E., for seven years connected with the Brown & Sharp Manufacturing Co., of Providence, R. I., in various executive capacities, has been appointed New England sales manager of the Calorizing Co., Pittsburgh, Pa., with headquarters in Boston.

During the war, Mr. Ellis was general manager of the A. H. Fox Gun Co., in charge of its various plants engaged in the production of small arms for the United States and British governments. Subsequent to this connection, Mr. Ellis was engaged in financing, reorganization and management work as industrial engineer for the Industrial Co., Boston, and for the last year or two in sales promotion work. He brings to his new work a wide experience in industrial matters and a practical knowledge of heat applications.

ALL-STEEL EQUIPMENT

All-steel equipment for oil country use is coming in for considerable attention in the fields of southern California. Steel derricks, steel bull and calf wheels and other products manufactured by the Emsco Steel Products Co., a newly formed organization with a factory at Alameda, Calif., are reported in demand recently, and although production started only a few months ago, night shifts are already needed to turn out the necessary quantity, according to this company. The steel products made by this firm claim advantages of the knocked-down feature and are hot-riveted and electrically welded throughout.

STEEL CONDITIONS MUCH BETTER; TANK ORDER FOR POWELL FIELD

By B. E. V. Luty

PITTSBURGH, Pa., Nov. 26.—Conditions in the steel trade continue to prove much better than had been expected. New buying appears to be far from brisk, as individual orders are small and only for very early delivery, but the number of orders is large and the total makes up a good aggregate, sufficient to prevent much decline in steel mill operations thus far. The mills are running chiefly on new or recent orders, old orders and contracts supplying only a relatively small part of the present rollings. This is true even of the Steel Corporation, which is operating mainly on comparatively new business. While the corporation has nearly 5,000 000 tons of "unfilled orders" on its books, much of this tonnage is in a sort of suspended condition, the buyers not specifying against it.

Consumption of steel in practically all industries except such as are entirely out of season is very heavy, this being proved by production and shipments, since steel buyers have been so conservative for months they would not take deliveries that were not needed for immediate consumption.

Production Rate High

Production of steel ingots, the basic or raw material for all rolled steel products, has declined a trifle since November 1, while in October the rate of production had been only one-half of one per cent below the September rate. Production now is at about 20 per cent under the record rate of last April, and about 20 per cent above the average rate in the four post-war years 1919 to 1922 inclusive. Thus the rate is plainly a very high one.

Indications are that mill operations will taker off rather sharply next month, as the year-end is reached, partly on account of seasonal decreases in steel constumption and partly on account of steel buyers desiring to reduce their stocks to minimum for inventory taking.

Finished steel prices continue to be well maintained, very few lines being at less than the levels reached in the advance that ended last April. Tubular goods, tin plates and wire products are particularly firm and promise to continue at present price levels for an indefinite period.

Declines in bars, shapes and plates were expected by many observers to occur before this, but now it seems practically certain they will carry through the year. After January 1 there may be declines and the present expectation is that this will depend on the volume of inquiry. If a large volume of business comes in sight mills will have an incentive to reduce prices if buyers insist. The program then would be to drop prices a few dollars a ton to round up a good backlog of business and then advance prices a trifle to improve the general tone.

Much is being said about the railroads "holding the key" to the steel market in 1924, in that they have large orders which they can place or hold back if they are not satisfied with prices, but this is very doubtful, particularly the claim that the railroads have 80 000 or 100.000 freight cars they would like to buy. Having functioned excellently well in the past few months, yet with some cars still due them on old orders, it is hard to believe the railroads would spend much more money on cars when there are so many other ways in which the roads could be improved.

Oil Country Goods

Shipments of oil country goods continue to taper off and are now of quite moderate volume. Shipments of standard or merchant pipe continue heavy and the pipe mills are well engaged, running at a higher percentage of capacity than most other finishing mills.

Tin plate capacity promises to be fully engaged through the first half of next year, estimates for packers' cans being particularly high. The New York subsidiary of the Standard Oil Company recently ordered 100,000 boxes to make export oil cans, and the New Jersey subsidiary is now in the market for a considerably larger quantity, for the first nine months of 1924.

The only oil tank business reported in 10 tanks, involving 1,600 tons of plates, for the Powell Field in Texas.

THERMOMETER MAKERS EXPLAIN ADVANTAGES

Running a refinery plant without recording thermometers would be like running an ocean liner without a compass or operating a plant without a cost system, according to the Foxboro Co., Foxboro, Mass., manufacturers of recording thermometers, who say their engineers invented the inverted pen arm now recognized as a distinct forward step in instrument design.

The Foxboro Co. claims five other advantages for its thermometer in addition to the inverted pen arm and V-shaped pen. The helical tube movement is uniform in every convolution and can be used constantly at maximum range without affecting its accuracy or strength; the special connecting tube is armored and flexible and the capillary tube is so constructed that it rarely breaks; the clock movement has a three-point support feature that eliminates all strain; the patent chart holder automatically centers the chart which is held friction-tight, and no mercury is used, the thermometer being actuated by the vapor pressure of a volatile liquid or the direct expansion of a gas. Instruments made for every type of service have ranges of from minus 60 degrees to plus 1,000 degrees.

VALUABLE BULLETIN OF TANK TABLE DATA

"Bulletin 500," the latest publication of the Youngstown Boiler & Tank Co., Youngstown, Ohio, contains tables, specifications and compilation of data that will be useful to all firms and individuals interested in tanks or refinery construction. Two elaborate tables give the gauge stick readings for "Youngstown" horizontal storage tanks of various lengths and diameters and the computations are worked out for all depths of the liquid from 1-inch to 126 inches. Other tables of capacities, weights and measures, specifications of steel plates and diagrams of various kinds of equipment, add to the value of the book. It is illustrated with photographs of tanks and refinery stills and other products of the company.

BUILDING PLANT AT TULSA

The National Turnbuckle Derrick Co., which moved from Pawhuska, Okla., to Tulsa recently, is building a manufacturing plant at Tulsa and expects to have all of the machinery in place and the plant in operation in a short time. The company is now building its derricks by hand, pending the completion of the plant. One of the rigs was on display at the International Petroleum Exposition.

The Osage Rig, Reel & Lumber Association, an associated company, is putting in several lumber yards in Oklahoma, one of which is in the new field in Seminole County, at Wewoka, and another at Lyman, Okla.

GASO PUMPS TO RUSSIA

The Gaso Pump & Burner Manufacturing Co. announces the receipt of an order for four Gaso Pumps from A. O. C. Fatchjang, Karachi, Russia. This is the company's first shipment to Russia, though it is doing quite a considerable export business, shipments having been made to many export points, including Rumania, British West Indies, Egypt, and other points.

"The Valve With a Leg to Stand On"

Any Size = Any Pressure

Good Pipe Line Construction Includes Westcott Valves

Manufactured By **Westcott Valve Company, Inc.** Seneca Falls N. Y.

ONE reason for the popularity of The Star Portable Drilling Machine is the saving of time and expense of moving and rigging up. A Star will do for you what it does for others as told in our booklet "PROOF"—sent upon request.

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Long Beach, Cal.
Export Office 1 & Rector St., New York

Steel Gaining Headway in Oil Fields

Greater Strain on Derricks With Heavier Tools and Longer Strings of Casing Factors Chiefly Responsible

By L. G. E. Bignell
Associate, American Society Mechanical Engineers

In reviewing the recent International Petroleum Exposition and Congress held in Tulsa there are many things that stand out prominently as achievements of that event, but none perhaps more so than the predominance of steel equipment for various purposes in connection with prospecting for oil and gas.

It is a comparatively few years ago when wood was used extensively around the rig for drilling wells, this being the condition that had obtained because of the ease with which this material could be secured when the oil industry was young, and the practice had been handed down from the time when the virgin logs from the white oak forests of the Alleghany Mountains had been easily accessible to the pioneer in this industry.

But with the added impetus given the industry during the period of high development in 1919 and 1920 the practice of using heavier equipment for every operation, development of steel equipment has been quite marked.

It is now conceded by practically all large producing companies that the steel derricks meet all requirements and there are now quite a variety of different types derricks of steel construction offered to the buying public in need of such equipment.

Greater Strain on Derricks

This has been brought about by the fact that the greater strains placed upon the derricks due to handling heavier and longer strings of casing together with the use of heavier tools has made the wooden structures more and more costly until the steel derricks are now found to compare quite favorably in cost with the wooden ones, when the salvage value of each type derrick is taken into consideration.

The steel derrick is comparatively new, having been first introduced and used to any extent some seven years ago.

These derricks are now made from both tubular and structural steel sections, designs varying principally in details regarding methods of fastening sections together.

The engineer has been called upon to design these derricks in practically all cases and this gives to purchasers added assurance that they can buy derricks particularly suited to their requirements, and be assured that these derricks will have factors of safety sufficient to insure their handling these loads in a satisfactory manner.

There is one other type of derrick that has met with considerable favor in certain sections and that is the "turnbuckle" type which is constructed with wooden legs and steel plate joints with pipe or rods for braces and girts. It is claimed that these derricks have all the "spring" of the old type wooden derricks with the added advantage of ease in assembling and dismantling.

Changes in Crown Blocks

The crown blocks on the top of all derricks have undergone marked changes in recent years, and the steel crown blocks with beams of either "I" beam or channel section and heavy self oiling boxes and large trunnions on all sheaves are being used more and more, because necessity requires that some form of bearing other than the old oak timbers be used to prevent burning of the bearings when subjected to the enormous strains they are required to sustain when handling long strings of casing, especially when same is "frozen" in the hole.

The crown blocks on the market today show many ingenious devices for keeping the trunnions of the sheaves lubricated and prove a boon to the helper on tower as they reduce the necessity of replenishing the supply of oil to a minimum, thus saving him many trips to the top of the derrick for this purpose.

Field practice has shown that added cross section in the trunnion of the sheaves was required and today the crown pulley, sand sheave and casing pulleys are all made with trunnions much larger than formerly considered necessary. In some instances these trunnions are of the same material as the sheaves themselves and in others the trunnions are made by casting the sheaves around shafts of steel.

This new type crown block of steel is paying for itself in the oil fields today by reducing the loss of time and material due to dropping casing and pipe, and further in permitting casing to be removed from holes which would not have been possible the old form of lighter crown blocks and sheaves.

The rig irons used for standard rigs in the Mid-Continent Field, including Wyoming and Montana, and in California and in most cases abroad, are constantly being made heavier and it is not safe at this time to predict what limit of sizes will ultimately be manufactured as standards.

The 6-inch California pattern irons are being used very generally now, which includes the chain driven calf wheel outfits and represent an increase in weight of about 100 per cent in the rig iron parts alone, without considering the added weight of the heavy calf wheel outfits.

These irons handle satisfactorily, the heavier tools now being used in starting deep holes and with the chain driven calfwheels give safety in every way in the handling of long strings of casing now so commonly employed in drilling deep tests.

In unknown or wildcat territory they are considered an absolute necessity for where the formations are not known to the driller, heavy equipment must be used to permit handling of the casing and tools, as conditions are liable to change in the well without warning and without the heavy equipment the hole, and perhaps the tools and casing, would be lost.

With the heavier rig irons the use of steel or metal bull and calf wheel outfits has become common practice and there are now several types of wheels of this type on the market, as well as metal tug rims for the bandwheels.

There has recently been placed on the market both steel pitmans and walking beams and while these parts seem slow in winning favor in some quarters still it appears that they have come to stay, and like the adoption of the steel drilling cable, it will only be a matter of time until the drillers become accustomed to the "feel" of the rig so equipped and use it as readily as he now uses rigs equipped with wooden pitmans and beams.

One reason that it is predicted that these parts will be made of steel rather than wood in the future is the constantly decreasing supply of good oak timbers for these purposes. Some other kinds of woods have been tried, but with only partial success and it is generally conceded that the period during which first-class oak logs can be secured at reasonable price for these uses is limited.

Band Wheel and Sand Reel

The shortening of the time within which the steel walking beam and pitman will be adopted more generally will also be brought about by the study being given to these particular problems by the designing engineers and factory production superintendents of the manufacturing companies, for they see their opportunity in this direction and are leaving no stone unturned to turn out fully satisfactory articles, and also convince the users that they are just as well suited to their requirements as the old wooden type beams and pitmans were.

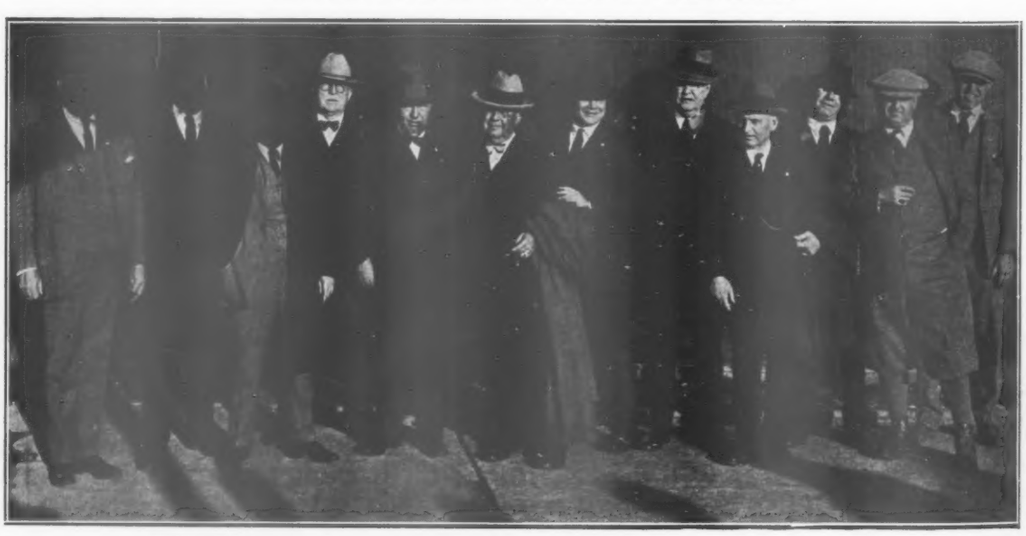
With the steel rigs the steel sampson posts and steel foundation members are merely matters of detail and this brings us to the back of the rig where we will consider band wheel and sand reels.

The band wheels of the past have all been built up of wood and held in place on the band wheel shaft and driven by band wheel flanges. The steel band wheel has been offered for some time and has met with some success in its adaptation by the drillers but the old wooden wheels still find a good deal of favor in most fields.

With these wooden band wheels there has always been a great deal of wear due to the cutting of the friction pulleys on the friction driven sand reels, and the roughened surface of the band wheel has in turn worn the belt passing over it excessively.

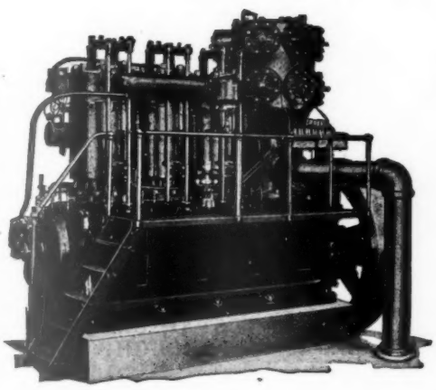
(Continued on Page 91)

OIL MEN TO CAMP IN WILDS OF OKLAHOMA



Down in the wilds of McCurtain County, Oklahoma, at the junction of Bok-tu-lo and Buffalo Creeks, on a 23,000-acre game preserve is a happy party of campers with Capt. N. V. V. Franchot, of Olean, N. Y., as their host. In the party are Ban B. Johnson, president of the American League of Baseball Clubs; Phil D. Ball, president and owner of the St. Louis Browns; Walter Fritsch, of St. Louis; John E. Schell, of Los Angeles, Calif.; Clint Moore, H. P. Anderson, George S. Davis, J. J. Larkin, Deverne Vensel, Bernard E. Horrigan and Douglas W. Fanchot, Tulsa oil men; and Harry Black, of Kansas City, all of whom, excepting Mr. Vensel, are in the above picture, taken at the Midland Valley Station in Tulsa just before their train started on Wednesday, November 14. The game preserve is owned by Captain Franchot and his son Douglas. It is in the Kiamichi Mountains and is an absolute wilderness where deer roam and wild turkeys are found in plenty and where the fishing is not to be excelled in the Mid-Continent. Captain Franchot is a prominent oil operator in the Allegany and Bradford Fields, near his home city, and with his son is active in the production of oil and the manufacture of casinghead gasoline in Oklahoma fields. The postoffice address of the party while in camp is Smithville, McCurtain County, Oklahoma, which is 10 miles west of the Arkansas State line and about 15 miles from the nearest railroad.

The Reeves Vertical Gas Engine—Compressors For Gas Booster Plants



Engine Sizes:
40 H. P. up to 250 H. P.

Engine-Compressor Sizes:
60 H. P. up to 160 H. P.

A few of the reasons why leading companies and engineers are purchasing the Reeves Gas Engines and Compressors.

They know the Reeves unit is not an experiment, having proven its reliability and worth over a period of about twenty years successful service.

Account of the simplicity of operation; low fuel and maintenance cost per horse power. One user just reported having operated last four units 16 months without shutdown.

All Compressors equipped with "Hope" Biplane, Patented, easy operating, high speed Valves.

Saving in installation time partly pays for unit.

Saving in plant construction cost from 20 to 50%, depending on location.

Branches Pittsburgh, Penna. Tulsa, Okla. Casper, Wyo.

HOPE ENGINEERING & SUPPLY CO.
Mt. Vernon, Ohio, U.S.A.

Consulting and Contracting Engineers in Natural Gas and Oil.

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CASPER, WYOMING

We also furnish a Chain Mounting for the A. S. M. E. Boilers

THE LEIDECKER TOOL COMPANY
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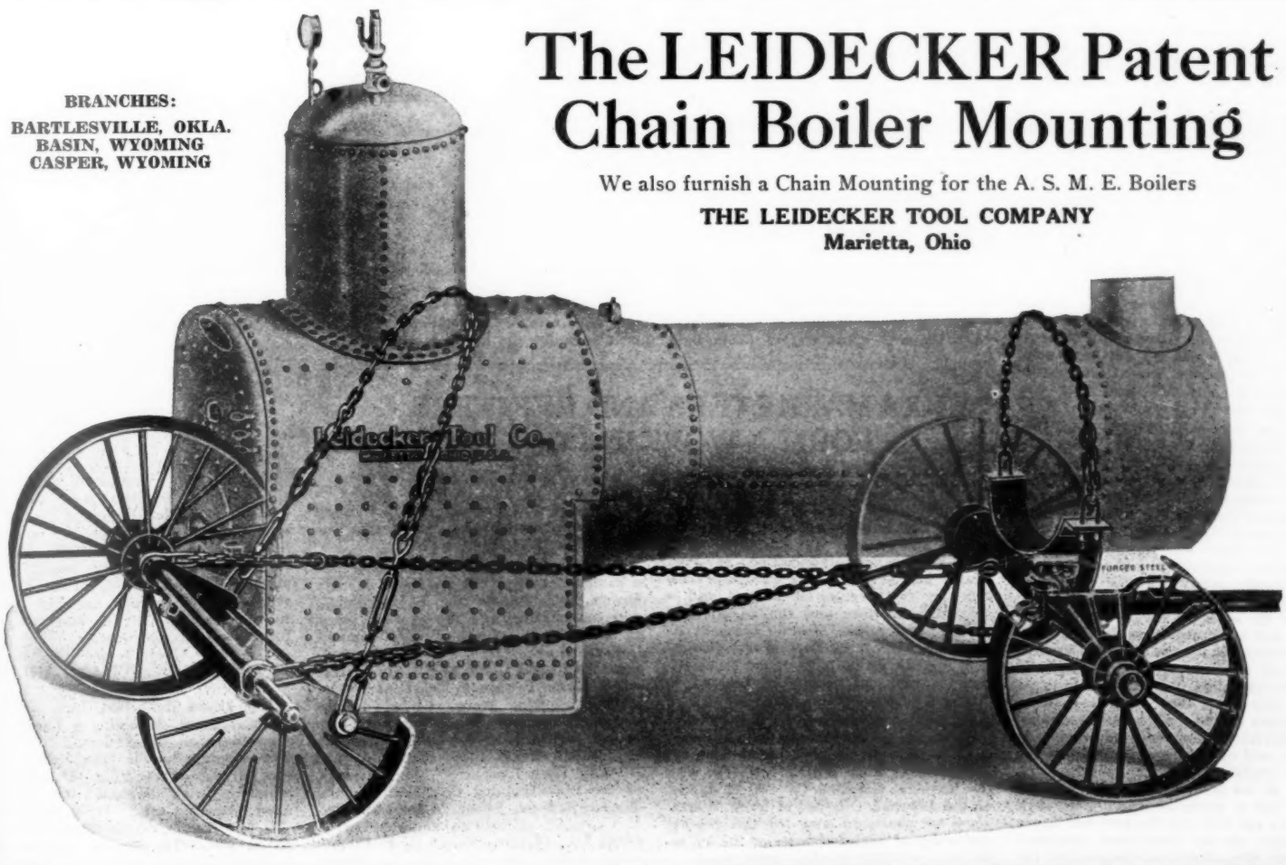

REFINING AND MARKETING SECTION

McMaster Challenged By S. Dakota Dealers On Profit Figures

By Staff Correspondent

SIOUX FALLS, S. D., Nov. 26.—W. H. McMaster, Governor of South Dakota, who in August gained nationwide notoriety by precipitating a gasoline price war, has become a strong opponent of Senator Thomas Sterling for endorsement at the Republican meeting December 4, for United States Senator. Critics of the Governor charge his gasoline war was for paving the way.

In the meantime, gasoline dealers of the State are engaged in a dispute with Governor McMaster as to the percentage of profit in selling gasoline at a certain figure. In a recent statement the Governor charged there was a profit of from 40 to 60 per cent in the oil business in South Dakota. Both Standard Oil and independent dealers have challenged this statement. They called upon him to produce the figures by which he arrived at such a conclusion. In reply Governor McMaster issued a statement in part, as follows:

"Notwithstanding that Standard Oil and the balance of the oil combine in South Dakota characterize as 'absurdly ridiculous' my charge that there was a 40 per cent gross profit on gasoline from carload lots to the automobile, I still contend that statement is true, not mentioning the excessive profits in lubricating oils and kerosene. The State is offered oil at the Mid-Continent fields this morning at 6½ cents. The Railroad Commission's figures show the freight rate is 2.85 cents per gallon to Sioux Falls from Tulsa, Okla. This makes a total of 9.34 cents per gallon laid down in Sioux Falls in carload lots.

"Adding to this the State tax of 2 cents and one-tenth of 1 cent for inspection fees, makes a total of 11.44 cents. The old selling price in Sioux Falls was 15½ cents, which shows a margin of 4.06 cents a gallon. In view of the fact that the 2-cent State tax is not paid by the oil companies until after the oil is sold and therefore is paid by the public in advance, it cannot in any wise be considered as the original cost of oil and therefore the cost of oil laid down in Sioux Falls in carload lots in 9.44 cents a gallon and the profit is 4.06 cents. Dividing 4.06 cents by 9.44 cents, makes 42 per cent gross profit on oil handled in carload lots to the consumer. The rate of profit is practically the same in every center."

Gasoline dealers at Huron and elsewhere in the State assert that when Governor McMaster uses the cost price as the basis for figuring his percentage of gross profit he uses absolutely the wrong basis. The dealers contend the selling price is the only basis. Dealers challenge the governor to produce any approved accounting method covering a mercantile business whereby arriving at the gross percentage of profit, the same is not applicable to the selling price instead of gross profit; any mercantile organization bases this percentage upon the gross sales which is arrived at from the selling price of their merchandise, and in no instance would they keep their records showing percentages on the purchases.

Furthermore, they contend, dividends are not paid out of gross profits, but out of net profits, and with operating expenses at no less than four cents per gallon, and in many instances more than this, they ask how can the governor figure any return on the investment whatever, to say nothing about his charges that the gasoline dealers are "highway robbers."

PRAIRIE-COSDEN RUMORS CONTINUE DESPITE LACK OF CONFIRMATION

Rumors of a deal involving the Prairie Oil & Gas Co. and Cosden & Co. have been general in Mid-Continent oil circles during the past week and continue despite the lack of official confirmation. The story, which has been rumored consistently since the Prairie obtained control of the Producers & Refiners Corp. recently, received wide credence following the visit to Tulsa last week of J. S. Cosden, president of Cosden & Co., and Nelson K. Moody and Dana H. Kelsey, president and vice president respectively of the Prairie Oil & Gas Co. Officials of the Taxman Refining Co., a large marketer of Cosden products, were also in the city at the same time.

Although officials declined to state the reason for the conference held in Tulsa shortly after their arrival, considerable significance is attached to the fact that it was not definitely announced that matters of concern to both concerns had not been discussed. It is believed that the Prairie Oil & Gas Co. contemplates either acquiring or allying itself with refining and marketing concerns to provide an outlet for its present crude production and purchases. At the same time it is believed that Cosden & Co. would be receptive to an arrangement which would either give it a large crude supply or provide a more profitable outlet for its refinery output.

Factors Discussed

In acquiring the Producers & Refiners Corp. the Prairie Oil & Gas Co. did not better its immediate situation in regard to an outlet for its crude production and that which it purchases and has in the past transported to eastern and middle west refineries through the lines of the Prairie Pipe Line Co. The present total refining and marketing facilities of the Producers & Refiners Corp. are hardly more than sufficient to handle the crude production of the company. Due to this fact it believed that if the Prairie is seriously considering building up a refining and marketing organization to compare with its production and transportation facilities the immediate acquisition of other properties is certain.

The plant of Cosden & Co., located at Tulsa, with a capacity of 40,000 bbls. daily, it is pointed out, would handle the present net production of the Cosden interests and the Prairie. But it would not provide an outlet for the crude purchases of the Prairie. Many are inclined to discount any Cosden-Prairie connection due to this fact. These observers contend that the location of the Cosden refinery is geographically wrong to interest the Prairie, which must in its future policies establish refining and marketing connections not only adequate to permit the operation of its producing and transportation facilities but at the same time must be located at different points touched with the trunk lines of the Prairie Pipe Line Co. This situation has led to the report that any transaction between the two companies would not involve a change in ownership but would consist of a contract temporary in nature which would be of mutual benefit to both companies during the coming year.

Principals Interviewed

Mr. Kelsey said his visit to Tulsa was primarily in connection with Producers & Refiners Corp. transaction. Asked concerning other matters he referred to the Prairie's known policy of "waiting until the thing was done before making any announcement." He said that all plans in connection with the operation of the Producers & Refiners Corp. properties had not been decided. He said the Tulsa offices of the companies will be consolidated at the Prairie headquarters in the near future. The stock transfer to the Prairie has not been entirely completed.

Mr. Cosden said no importance was to be attached to his conference with Messrs. Moody and Kelsey, which he termed a meeting of "friends who happen to be in the same city at the same time."

"Conditions are better and there may be cause for real encouragement six months from now," Mr. Cosden said in commenting on the present oil situation, "but it is no time for producers to go out and bring in more wells." Undue optimism regarding the situation is exceedingly dangerous at this time, he said, and may postpone indefinitely a permanent turn for the better.

TEXAS MARKETERS AND REFINERS FORM A WORKING ORGANIZATION

By Dan F. Dugan

FORT WORTH, Tex., Nov. 26.—A meeting of the independent oil marketers, jobbers and refiners of Texas was welded into a working organization at Fort Worth Thursday, after a two days' session, by the election of officers and a board of directors and the adoption of by laws and rules. Most of those in attendance were from Fort Worth, Dallas and Wichita Falls, with others from different sections of the State. Around 50 attended both days' sessions.

Mayor E. R. Cockrell of Fort Worth, welcomed the visitors. The Mayor's address of welcome was responded to by W. B. Spann of Fort Worth, formerly with the National Gasoline Co. B. E. Little, of the Litwood Oil Co., of Fort Worth, acted as chairman and led the general discussion of various phases of the oil industry, including gasoline price wars.

Several talks were made on the importance of independent oil men forming an organization and the organization was approved by a unanimous vote.

The social feature of the meeting was a banquet at Top O'Texas Hotel. Marvin Brown, president of the Kiwanis club, was toastmaster, and the speakers were R. C. Forman of the Texas Woman's College, H. C. Burke, Jr., of the Continental National Bank, and J. K. Helmar of the Radio Petroleum Co., Fort Worth.

The following were selected as the board of directors for the coming year: W. R. Smith, Oriental Oil & Refining Co., Dallas; D. E. Little of the Litwood Oil Co., Fort Worth; W. M. Harrison, of the Star Refining Co., Fort Worth; Weston Atwood, jobber, of De Leon; W. E. Campbell, of the Panhandle Oil & Refining Co., Wichita Falls; E. J. Linderman, jobber, Houston; C. A. Slimp, jobber, San Antonio; R. N. Mullin, jobber, El Paso; J. K. Helmar, jobber, Radio Petroleum Co., Fort Worth. The following were recommended for official positions by the board of directors and their selection was endorsed unanimously: D. E. Little of Fort Worth, president; W. E. Campbell, vice president; R. N. Mullin, second vice president; W. H. Harrison, secretary-treasurer, Fort Worth.

L. V. Nicholas, president of the National Petroleum Marketers' Association was present and confined his address to organization plans. An initial joining fee was adopted and nearly all those present paid up and received their membership certificate. It was decided to hold the next meeting at either Dallas or San Antonio about the middle of January.

COST OF SALES MORE THOUGH VOLUME SAME

The profit from the operations of the White Eagle Oil and Refining Co. for the first nine months of this year totaled $545,996.40 in contrast to $1,113,-012.70 for the first nine months of last year, according to a recent statement to stockholders. The report is interesting as indicating the comparative profit situation of the two years for concerns like the White Eagle which admittedly is more strongly fortified than the average independent company. The report shows that, despite the low prices when compared to last year, the company's total sales were approximately the same but cost of sales were $420,000 more than this year than last.

The comparative statement of the company follows:

	1923	1922
Sales	$4,136,766.44	$4,018,413.76
Cost of sales	2,926,771.48	2,506,105.02
Gross profit	$1,209,994.96	$1,512,308.74
Expenses—		
General administrative and selling exp.	663,998.56	399,296.04
Profit from op.	$ 545,996.40	$1,113,012.70
Add:		
Miscl. income credits	73,502.88	44,702.01
Total income	$ 619,499.28	$1,157,714.71
Deduct:		
Miscl. income charges	91,328.66	75,705.66
Net income	$ 528,170.62	$1,082,009.05
Net income first six months	1,734,586.37	1,434,610.46
Net income first nine months	$2,262,756.99	$2,516,619.51

The above represents net income before deducting reserve for depreciation, depletio nand federal income tax.

SILICA GEL CONTRACTS

NEW YORK, Nov. 26.—No companies other than the Vacuum Oil Co. and the Royal Dutch interests have contracted with the Davision Chemical Co. for the use of the Silica Gel process, according to an announcement by W. D. Huntington, vice president of the company. The statement was made following a report that several Standard units in addition to the Vacuum Oil Co. had contracted for the use of the process.

TOPPING PLANT AT LAREDO

The Misko Refineries, Inc., located at Laredo, Texas, is adding a 750-bbl. topping plant to its refinery in that city. The topping unit is being installed for the purpose of handling 45° gravity oil which is being developed in the Schott Pool near that city. It is claimed that this 45° gravity oil yields in topping approximately 47½ per cent gasoline, 27½ kerosene, 20 per cent gas oil and 5 per cent bottoms. It has a paraffin base.

PURE OIL REFINERIES:

Warren, Pa.
Marcus Hook, Pa.
Heath, Ohio
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Cabin Creek Junction, W.Va.
Cushing, Okla.
Ardmore, Okla.

Gasoline
Kerosene

Naptha
Gas Oil
Fuel Oil
Lubricants
Paraffin Wax
Road Oil

We assure dealers prompt shipments in barrels or train lots from the most convenient of our seven refineries. Pure Oil Service gives you the advantage of Quality Products, dependable service and in many cases a saving in freight charges.

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The PURE OIL Co.

General Offices: Columbus, Ohio

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CHICAGO, ILL.
DETROIT, MICH.
DALLAS, TEXAS
SAN FRANCISCO, CALIF.
NEW YORK, N. Y.
PITTSBURGH, PA.
TULSA, OKLA.
PHILADELPHIA, PA.
CHARLESTON, W. VA.
MINNEAPOLIS, MINN.
SEATTLE, WASH.

Kentucky Oil Has Big Gasoline Content

Cracking by the Dubbs Process has Resulted in Large Yields of Motor Fuel in Addition to Commercial Coke

By Gustav Egloff
Director Research Laboratories, Universal Oil Products Co., Chicago, Ill.

One of the most remarkable industrial achievements of the twentieth century has been the conversion of heavy petroleum oils into high yields of gasoline by the cracking process.

The Dubbs process has commercially cracked Kentucky fuel oil into more than 43 per cent of navy initial and end point gasoline. For every 100 bbls. of fuel oil converted into more than 43 per cent gasoline, over 2,000 pounds of coke were produced.

Prior to the advent of the Dubbs process, cracking installations were limited strictly to low coke forming oils from such as kerosene and gas oil. The coke specifications were rigid and called for a charging stock having three-tenths of 1 per cent or less upon dry distillation. The Kentucky fuel oil which yields over 43 per cent gasoline under the same coking test conditions gave over 5 per cent coke.

The process is not limited to high coke forming oils, but has the widest flexibility in that the same unit has commercially cracked low coke forming oils such as kerosene into more than 50 per cent gasoline.

As further illustration, the same type apparatus has commercially cracked the following diversified oils into high yields of gasoline: Mid-Continent kerosene, gas and fuel oil; Louisiana fuel oil and topped crude oil; Ranger topped crude; Burkburnett fuel oil; Long Beach fuel oil; California kerosene, gas and fuel oil; Mexican topped light oil; Mexican gas and fuel oil; Venezuela fuel oil; Tarakan Borneo crude; Panuco crude and fuel oil; Healdton crude oil, and other oils.

The Kentucky fuel oil yields a larger amount of coke under cracking conditions than most petroleum oils in the United States. The physical and chemical characteristics of fuel oil used as charging stock is as follows:

Baume Gravity 25.5
Cold Test .....2° F.

Viscosity Saybolt Furol

778 F.	176 Sec.
122 F.	

Cleveland Open Cut Tester

Flash .....315° F.
Fire .....370° F.
Coke 5.1%
Sulphur 0.367%
Calorific value 19,340 B. T. U. per pound Engler distillation (800 c. c. charge)
Initial Boiling Point .....504° F.
1% Boiling Point over at.....572° F.
0.1% water

Per Cent Distilled Over	Temp. Deg. F.
10	653
20	691
30	698
40	706
50	708
60	716
70	712
80	672
90	640

The charging oil decomposes quite readily at atmospheric pressure and gives a considerable quantity of uncondensable gas. The oil makes an excellent cracking stock when subjected to elevated temperatures and pressures, in the process under discussion. The percentage of water present does not appreciably affect the cracking reaction nor the smoothness of operation. The sulphur present in the oil did not materially affect the quality of the gasoline produced by the process. The coking test shows high percentage; but under cracking conditions of heat and pressure the reaction velocity was readily controlled so that all the coke is deposited in a reaction chamber outside of the heating zone.

Arrangement of the Apparatus

The apparatus for carrying out the cracking process consists of:

a. Furnace comprising two compartments, one of which is the combustion chamber, while the other contains the heating tubes and around which the products of combustion pass.

b. Fifteen hundred feet of continuous 4-inch diameter cold drawn seamless steel heating tubes, each 30 feet long, connected with drop forged steel return bends.

c. The steel return bends are provided with openings, so as to allow flue cleaners to pass into the steel tubes. The openings are closed with special alloy bronze plugs which are excellent seals preventing leaks of any kind.

d. From the last steel tube, there is a pipe connection, to transfer the liquid to the top of an expansion chamber.

e. The expansion chamber is hammer welded, 10 feet in diameter and 15 feet high and built to stand a pressure five times that of the operating temperature. The chamber is provided with residual oil draw-off connections and liquid level determination device. Steam connections are provided, so as to thoroughly steam out the chamber at the end of a run. To the top of the chamber is connected a vapor line. The expansion chamber is insulated and no external or internal heat comes in contact with the chamber. The chamber is installed several feet away from the furnace.

f. The vapor line leading from the top of the expansion chamber is connected to the bottom of the dephlegmator.

g. The dephlegmator is of the pan type, for the purpose of fractionating out the heavier vapors from the cracked product issuing from the expansion chamber. The delphlegmator is provided with a reflux of oil leg connection attached to the combined feed in the oil line going to the heating coil of the furnace. Approximately one-half way down the center of the dephlegmator the raw oil to be cracked is pumped. The lighter cracked vapors pass out of the top of the dephlegmator to the water condenser.

h. The lighter cracked vapor condensing and cooling coil is situated in a water box provided with inlet and outlet for the water which is pumped in continuously.

i. A pressure distillate receiver is provided to collect the condensed pressure distillate oil and uncondensable gas. The pressure distillate oil is continuously drawn out by means of a control valve to a gas separating tank. The pressure on the entire system is controlled by the discharge of noncondensable gas from this tank.

j. The gas separating tank allows the dissolved gas in the pressure distillate oil to pass out, combining with the uncondensable gas from the pressure distillate receiver.

k. The uncondensable gas including the separated dissolved gas from the pressure distillate oil are connected with pipe and burner arrangement so that they may be burned as fuel in the furnace or utilized in other ways.

l. A residuum oil cooling coil is provided to bring the temperature of the residuum down to atmospheric temperature. The piping and control valve for the continuous flow of the residuum, out of the expansion chamber, are connected to the cooling oil.

m. A raw oil charging pump is provided to pump the oil to the dephlegmator or directly to the heating coil or split the stream of oil to both parts of the system.

n. Meters are provided for recording the amount of raw oil flowing into the system, pressure distillate oil and uncondensable gas produced.

o. Pressure gauges for the recordation of the pressure upon the apparatus are installed.

p. Emergency draw off line is provided leading to a pump.

q. A flow chart of the apparatus is shown in figure o.

r. Pyrometers are installed which indicate and record temperatures at the various points of the process.

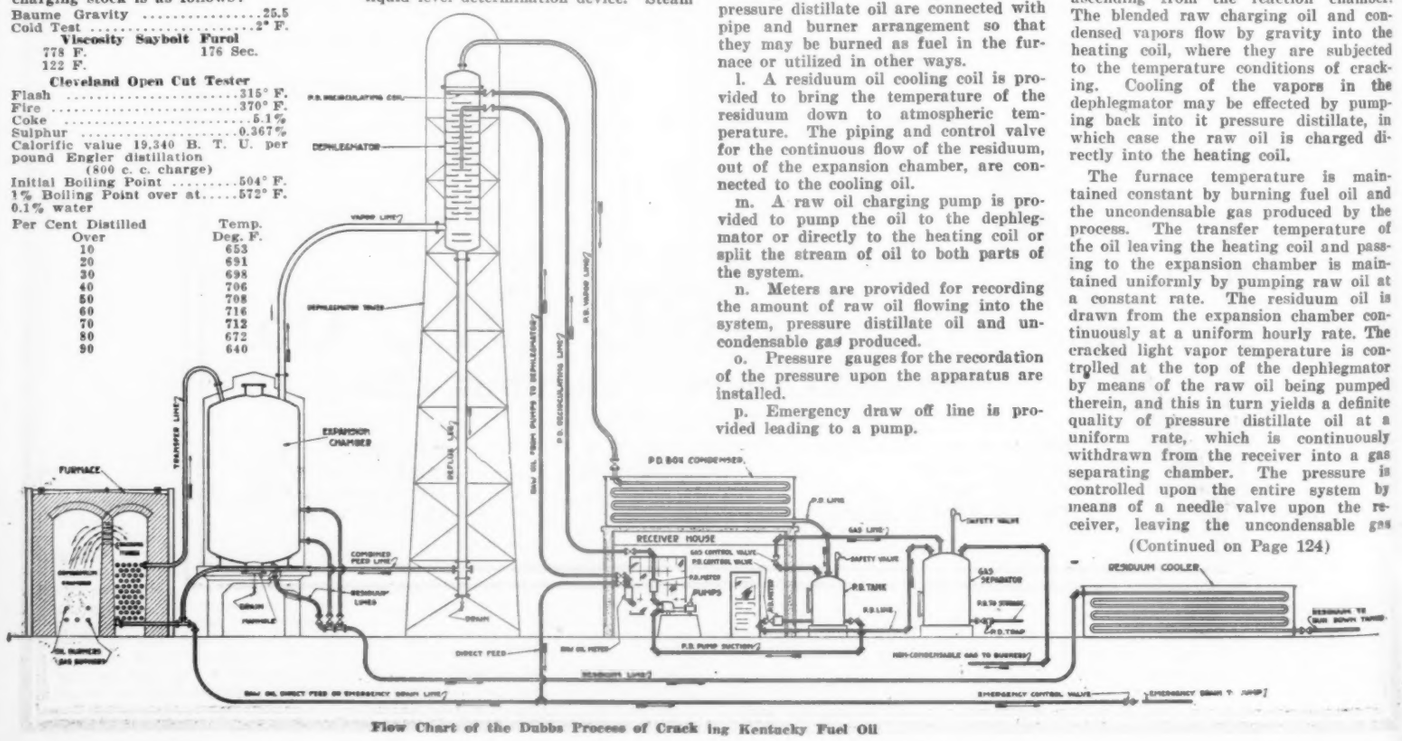
Method of Operation

The mode of operation of the apparatus is to first purge the system of all air which may be present, by charging the system with oil and testing it by applied pressure for possible leaks. The plant being found tight, the fires are started and circulation of oil through the system starts by convection. As the oil is heated, certain fractions are vaporized, displacing the oil in the dephlegmator; the oil thus displaced being withdrawn from the system through an open residuum line and returned to the raw oil charging tank. This procedure is followed until a working level of oil is established in the system, at which time, the raw oil charging pumps are started and the pressure allowed to build up the system. The oil discharging from the heating coil shortly thereafter reaches the operating temperature and as the vapors and noncondensable gas produced generate the required pressure, cracking begins and pressured distillate is produced. At this time, the operating temperature and pressure are maintained constant by the release of noncondensable gas, and regulation of the amount of oil passing through the heating coil by means of speed regulation of the raw oil charging pump. When the gravity of the residuum oil drawn from the system shows the desired reduction from that of the raw oil, the flow is sent to the residuum tanks.

The raw oil is pumped partially into the dephlegmator and partially into the heating tubes. The portion of raw oil pumped to the dephlegmator condenses to a liquid the heavier portion of the vapors ascending from the reaction chamber. The blended raw charging oil and condensed vapors flow by gravity into the heating coil, where they are subjected to the temperature conditions of cracking. Cooling of the vapors in the dephlegmator may be effected by pumping back into it pressure distillate, in which case the raw oil is charged directly into the heating coil.

The furnace temperature is maintained constant by burning fuel oil and the uncondensable gas produced by the process. The transfer temperature of the oil leaving the heating coil and passing to the expansion chamber is maintained uniformly by pumping raw oil at a constant rate. The residuum oil is drawn from the expansion chamber continuously at a uniform hourly rate. The cracked light vapor temperature is controlled at the top of the dephlegmator by means of the raw oil being pumped therein, and this in turn yields a definite quality of pressure distillate oil at a uniform rate, which is continuously withdrawn from the receiver into a gas separating chamber. The pressure is controlled upon the entire system by means of a needle valve upon the receiver, leaving the uncondensable gas

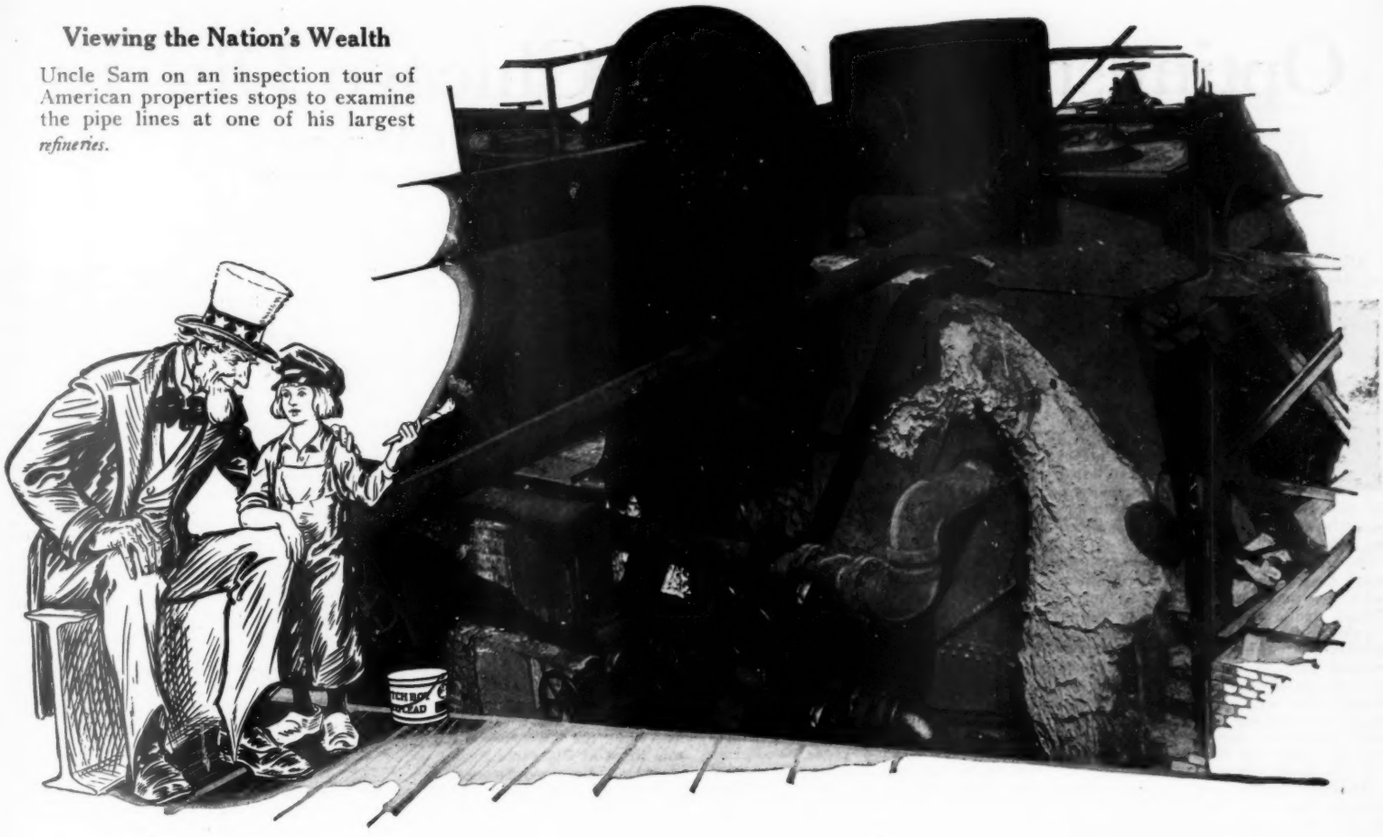
(Continued on Page 124)



Flow Chart of the Dubbs Process of Cracking Kentucky Fuel Oil

Viewing the Nation's Wealth

Uncle Sam on an inspection tour of American properties stops to examine the pipe lines at one of his largest *refineries.*



The Dutch Boy Painter:

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The economy of painting your metal thoroughly before and after you erect it is not to be questioned when you consider the enormous amount of metal consumed by rust each year. If rust has already attacked your metal, clean off dirt, rust and loose scale, and cover the surface with Dutch Boy red-lead.

Dutch Boy red-lead is available both in paste and liquid form. The *liquid* comes as straight, untinted red-lead for application next to the surface and also tinted to browns, greens and black for finishing coats. The *paste* comes untinted, but can be tinted to various dark colors.

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Dutch Boy Red-Lead

Optimism Evident in Chicago District

Refiners and Marketers Feeling Better Because of Downward Trend of Crude Production. "Distress" Gasoline is Higher

By Ralph T. Baker

CHICAGO, Nov. 26.—A general tendency toward optimism was the most pronounced development among the refiners and marketers doing business in the Chicago territory during the past week. The distress New Navy gasoline of the previous week had crawled to a higher price level and other products participated in the generally better feeling with the possible exception of natural gasoline which continued weak.

A repetition of decling production in most flush areas of the nation, coupled with reports of salt water at Powell, Texas, and a steadily decreasing output in California, has pointed the way to a better situation for the marketers in this region, many of them believe. Reports of premium offers for Tonkawa and Burbank crude, and the probability of an early scramble for desirable Mid-Continent production have served to stimulate the optimistic tendency.

Avoid Premature Boom

On the other hand, the more conservative men point to the folly of a boom, started prematurely. They feel that the approach of winter, with declining sales of gasoline and a decrease in demand for all products cannot afford support for a material increase in the price structure at the present time. The general opinion among all oil men indicates prosperity in 1924, but there is a division of minds concerning the proper time for the advent of better prices.

One group feels that the strength shown during the past few days is indicative of a continued strong market leading to higher prices for all products. Others take the event as a temporary occurrence due to the late fall and the longer period incorporated in the motoring season.

The Standard Oil Co. of Indiana has recognized the growing importance of home oil burner installations in its teriority by recently placing on the market its Domestic Burner Oil in addition to the Stanolind Furnace Oil, which has been in use in the vicinity of Chicago for more than a year. Equipment has been installed by the company in Chicago, Milwaukee and St. Paul for retailing both grades of this light fuel oil. The Standard is making arrangements for additional marketing equipment in other large cities of the territory following the anticipated growth in use of the fuel in home burners.

Installations Increasing

In recent weeks the number of installations has grown remarkably, according to information from the offices of the company. The placing on the market of the Domestic Burner Oil is recognition of the importance of the type of fuel between a straw distillate and gas oil. The new product is utilized in installations where the fuel is sprayed or atomized under pressure, and it has an average gravity of 36-38 degrees Baume. It has a clear "gas oil" color, and is being delivered for 6½ cents in lots above 200 gallons. It brings 7 cents in bucket-lots below 200 gallons.

Stanolind Furnace oil, corresponding in many ways to straw distillate, has a clear "kerosene" color and a higher gravity than the burner oil. It is used in installations where the oil is volatilized. It retails at 8 cents per gallon.

The importance of home burners in the central and north central States is seen in the fact that a recent survey showed more than 18,000 installations in Chicago, 4,000 in Milwaukee and more than 3,000 in St. Louis. The installations range from the home of average size to the large apartment hotels and office buildings. Consumption varies from 1,500 to 300,000 gallons annually.

The wide price spread tendency in New Navy noticed the week before narrowed slightly during the past week. The small amount of 6-cent gasoline available a few days previous passed out of existence and the prevailing market was 6¼ to 6½ cents with some gasoline at 6¾ cents to the trade. A group of true optimists continued to hold out for 7 cents and 7¼ cents with some men reporting scattered sales of small amounts at 7 and 7⅛ cents. Actual sales at these figures were considered negligible, however.

Demand Off Slightly

Regardless of the stronger price tendency in Navy, the demand seemed to have slumped slightly during the week, as reported from some quarters. Others declared the demand good, considering the season and the movement in general may be considered fair, for the present time of the year. Future developments in Navy are causing considerable reflection from the jobbers, who are acting slowly and with a large amount of caution. Many look for no immediate improvement in marketing conditions and yet they cannot believe prices will go lower. There is a general feeling that the bottom has been reached. But the uncertainty concerning the time and degree of increase in values is still prevalent.

The higher gravities participated but little in the stronger tone in New Navy. The changes were slight, and the movement was small. Most grades were steady to weaker in comparison with the prices of the week before. As a rule 60-62 400 end point gasoline was turned to the trade at 7½ to 7¾ cents. The 64-66 375 end point product was good for 8½ to 8¾, while the 68-70 360 end point stuff was steady at 9½ to 10 cents. There was little demand for the 56-58 450 end point gasoline, which was being sold to the trade at 5½ to 5¾ dents generally.

Naphthas had not been influenced materially by the 2½-cent tank wagon reduction in three grades announced during the latter part of the week by the Standard Oil Co. of Indiana, effective in its entire territory. New prices follow: Stanolind Cleaners Naphtha, (about 58 degrees Baume gravity) 16½ cents; Varnish Makers and Painters Naphtha, (about 56.5 degrees Baume gravity) 16 cents, and Oleum Spirits, (about 48 degrees Baume gravity) 13½ cents. Refinery prices during the week indicated little demand for the lower naphthas. The 48-50 450 end point product brought an average of 5¼ to 5½ cents per gallon, while the 50-52 450 end point stuff was rated at 5½ cents to 5¾ cents.

Kerosene Stronger

Kerosene again partook of the stronger sentiment, with small amounts only of the 41-43 water white available under 4½ cents. The price generally ranged from 4⅝ cents to 4⅝ cents. The 42-44 water white kerosene was selling to the trade at 4½ to 4¾ cents. The demand for domestic consumption seemed to have declined somewhat and prices seemed to hesitate following stories of increased kerosene production in Mid-Continent refineries. Export orders were drawing on stocks heavily, however, with prospects good for a continued strong market.

Blends were in poor demand with small amounts moving. The prices remained steady to the figure for the week previous with a declining tendency apparent. The comparatively low price for Navy has temporarily put blinds out of the running with some few exceptions. The 60-62, 450 end point, was going to the trade at 6 to 6⅛ cents, while the 64-66 450 end point commanded a slight advantage selling at 6⅛ to 6¼ cents.

Natural gasolines were the weakest spot on the list. Grade C seemed to be in greater demand, with only fair amounts moving. The other grades aroused little interest. The average price for Grade A was 6⅛ to 6⅜ cents, while Grade B was selling for 5⅞ to 6¼ cents and Grade C was passing to the trade at 5½ to 5¾ cents.

Straw distillate of 38-40 gravity responded to inquiries with a firm price of 3¼ to 3½ cents, with some stuff reported available at 3⅛ cents. The tendency was upward, however, due to the demand for use in home burner installations. Gas oil recovered slightly during the week, bringing an average of 2¼ to 2⅜ cents per gallon. It also participated in a seasonal demand and is in line with the straw distillate in maintaining a greater value as a result of the recent increase in kerosene. Larger cuts into crude for kerosene results in a diminished supply of these products.

Fuel Oil Stationary

Fuel oil remained practically stationary, with a few of the big buyers making their anticipated appearance. The 24-26 gravity was slightly softer, averaging 67½ to 70 cents, with some sales made above this figure. The prevailing price was 70 cents, however, with the demand spotted. Most fuel dealers were still on the waiting list, pending the approach of a number of large consumers, known to be awaiting the bottom of the market before placing their orders. They are being encouraged to buy soon, as prices are thought to be on bedrock now.

Smackover fuel oil, 18-20 gravity, was passing to the trade generally at 55 to 60 cents, with a few sales reported above this level. The El Dorado fuel, 22-24 gravity, was bringing 62½ to 67½ cents. Road oil, with the consumption season past, was worth 90 cents to $1, while orders for the coming year were being taken at a higher figure.

Gulf Coast zero lubs have caused a weaker structure in Mid-Continent lubricants, due to the approach of colder weather. The demand in the Chicago region at present is for zero cold test oils, with practically all buyers going to Texas for their purchases. Oklahoma neutrals, averaging 25-30 cold test, are feeling the effects of the competition. Discounting this fact, there has been a fair demand for neutrals, with numerous inquiries for bright stock and but little interest in steam refined stocks. Wax continued strong, with little obtainable. Many refiners report they are sold up over a considerable period on this product.

Reports of easier money in the oil industry, and the rumor that the financial interests were determined to "see it through" for the different branches of the business did much during recent days to bring about the better feeling in the refining and marketing divisions in this part of the country. Purchases of increasing amounts of crude oil by Mid-Continent pipe line companies point to early 100-per cent runs from all sections, and increased demands for petroleum. Storage programs are reported financed and the demand for crude is expected to reflect an equally large demand for all refined products.

CONSUMPTION OF GASOLINE IN EAST HOLDING ABOVE ALL EXPECTATIONS

By N. O. Fanning

NEW YORK, Nov. 26.—The refined oil markets in this territory were more quiet during the past week. Practically the only change in prices of importance was the reduction of 10 cents per barrel in the price of bunker fuel to $1.35, lighterage extra.

The gasoline market is in about the same condition as it has been for the past month. Despite the reductions in tank wagon prices by the large marketers, small independents continue to undersell. In parts of New England, gasoline can be had at service stations for 15 cents per gallon, retail, as against a general tank wagon market of 15½ cents. This indicates the possibility of further reductions of 2 or 3 cents.

The consumption of gasoline is holding up beyond all expectations. The weather has been unusually favorable, with warmth and little rain. This has stimulated demand considerably, so that the trade has met with only a moderately small decline in consumption due to seasonal causes. Despite large stocks of gasoline on hand, the trade can legitimately worry about supplying next year's demand if it continues to increase according to present indications.

Offerings of tank car lots of Mid-Continent and Pennsylvania gasoline continue heavy. Added to this is the steady gain in the number of marketers of gasoline in the Atlantic Seaboard who get their supplies by tanker. New refineries are going up at the principal harbors.

To Build Own Stations

The movement on the part of the large gasoline marketing concerns to build their own service stations is gaining headway and this is looked upon as a factor making for increased stability in the Atlantic Seaboard markets next year. The large marketers who are best established here have just begun to follow this policy, having been forced to by the large independents who brought the idea with them from the southwest. It soon became evident that automobile owners preferred to buy their gasoline from attractive stations where good service could be obtained rather than to buy from temporary stations. Furthermore, at stations owned by refiners, the consumer has a way of knowing exactly what brand or make of gasoline he is getting.

Probably 100 new service stations owned by the large refiners have gone up in New York City during the past few months, and as they each represent an investment in land and buildings, pumps, tanks, etc., of $10,000 to $20,000,

(Continued on Page 82)

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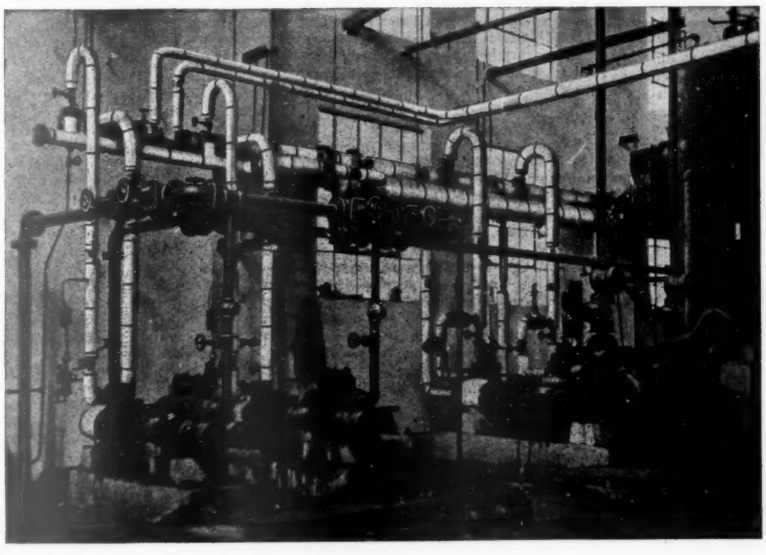

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Navy Seeks 50 Million Barrels Fuel Oil

Will Ask Congress to Create Such a Reserve in 12 Years, Taking Advantage of Low Price and Aiding Industry

By Charles E. Kern

WASHINGTON, D. C., Nov. 26.—A campaign for the storage of 50,000,000 barrels of fuel oil for the United States Navy should be begun at once and should receive proper approval not only by the oil industry but by the country at large as a measure of wise economy and preparation for any emergency that may arise in the future involving a shortage of petroleum.

It is not very widely known that the policy adopted by the Navy Department is for the storage of 50,000,000 barrels of fuel oil to be held as an emergency supply. This policy became a matter of record when hearings were held by the Senate Committee on Public Lands during its investigation of the contract of the Interior Department with Harry F. Sinclair for the removal of oil deposits from Naval Reserve No. 3, known as Teapot Dome. The policy was recorded in an official letter by the Secretary of the Navy in this language: "The total amount of reserve oil required, according to the present approved plans for the national defense, is 6,866,600 tons, approximately." These are long tons and, figuring seven barrels of 42 gallons to a ton, which is approximately correct, it will be seen that the reserve of fuel oil amounts to 48,066,200 barrels.

Navy Anxious for It

The Navy is working up toward the accomplishment of this policy by storing fuel oil taken from the Naval Reserves, paying for the storage tanks and accessories by turning over royalty oil of sufficient value to pay for these facilities to the oil companies that are removing the oil from the Reserves and constructing storage at cost. It is planned to have at Pearl Harbor storage for 4.130.000 barrels of fuel oil. Other storage of rather limited extent has been provided by the Navy Department both on the Pacific and Atlantic Coasts.

By suggesting a popular campaign for the storage of 50,000,000 barrels of fuel oil for emergency purposes it is not intended, of course, that such a vast quantity of oil should be purchased within a brief time. The orderly manner for providing such a reserve would be for Congress to do as it has done in the case of all sorts of public works, which would be to authorize the construction of storage tanks on a plan which has already been outlined by the Navy Department by which, within a period of perhaps 12 or 15 years, these storage facilities would be created and the fuel oil deposited in them. It was with an idea of creating this supply that the development of Naval oil reserves has been undertaken in the form that the contracts provide.

Teapot Dome Reserve

When the Teapot Dome was supposed to contain at least 135,000,000 barrels of oil, and when royalties were expected on much of this oil equal to from 30 per cent to 50 per cent, it was estimated that the Navy would receive enough oil to carry out its program for the storage of 50.000 000 barrels of fuel oil. Present estimates, however, indicate that the Teapot Dome will give in royalties to the Navy about 5.000.000 barrels of crude oil which, in turn, will be exchanged for about 2.000,000 barrels of fuel oil and storage in which it will be cared for for an indefinite period. Some Naval storage costs as much as the value of two barrels of crude oil and the price differs very greatly, according to location and accessories necessary to make the storage accessible.

With such fuel oil and storage as are obtainable from the Naval oil reserves an authorization by Congress providing annually for the construction of storage tanks of about 3,000.000 barrels capacity with an appropriation for the purchase of fuel oil to fill these tanks, the task of realizing the fulfillment of the policy for having 50.000.000 barrels of fuel oil stored at strategic points would be accomplished probably in about 12 years. This would result in adding to the storage plans that should be provided by Congress the supplies that may normally be expected from present contracts for removing oil from the Naval oil reserves and placing the portion that comes to the Navy as royalties into storage.

To Take 3.000.000 Barrels a Year

There is no doubt that the Navy would heartily approve the project as outlined in the foregoing and certainly the oil industry would welcome a policy for taking 3.000 000 barrels of fuel oil from the market every year for the next 12 years. It would be good business for the public and for the Government because this policy could be started now by getting absolute bargains for the Navy and there is little doubt that at the end of 12 years the government would have a commodity essential for the efficiency of its Navy worth vastly more than was paid for it.

The Navy, at this time on a peace basis, is using at the rate of about 7,000 000 barrels of fuel oil annually. It is perfectly well known that during the last two or three years there have been times when the fleets have been hampered in their operations because of necessity to unduly economize in the use of fuel oil. When this has occurred it has been deplorable in the view of eminent Naval officers because an inactive fleet means the consequent lack of training of both officers and men. A lack of fuel oil means that the vast naval preparation for the maintenance of peace or for active service in the defense of the nation will be subjected to a sort of dry rot resulting from inaction. An efficient naval establishment, both in respect to the personnel and the mechanical devices employed can only be maintained by activity and an adequate supply of fuel oil is the keynote to success in that respect.

Low Price Opportunity

The United States Navy is today given an opportunity to put into effect the essentials of conservation of the petroleum supply of the country that is seldom met. The prolific output of oil makes it possible both to purchase oil and to pay for its storage, at a price that will not far exceed the ordinary price of fuel oil alone whenever there comes a slight decrease in production. There is no doubt that if the Navy had funds at its command today the ordinary caution and anticipation of future needs would result in large storage facilities and in the purchase of fuel oil as rapidly as practicable. However, the Navy itself is circumscribed by limitations of appropriations, so that it is obliged to adopt a very conservative program. It is not able to anticipate future needs and to derive benefits of economy by the purchase on a low market of fuel oil supplies, together with gasoline and lubricating oil, which private commercial enterprises do whenever sufficient funds are at their command.

If this program for the purchase of fuel oil by the Navy is to be accomplished it must be by the concerted efforts on the part of the public at large and especially by the oil industry itself which is most familiar with the splendid opportunity opened to the Government for doing real business in meeting its demands in a business-like way.

Would Stabilize Prices

Such purchases and storage of oil by the Government would not only tend to re-establish normal conditions in the producing industry, itself but would have a stabilizing effect on prices of fuel oil for several years to come. With a large quantity of petroleum in storage the necessity of the Government to enter the market in any particular year would be avoided. Should a shortage of petroleum develop in comparison with the demand during the next few years it would be possible for the Government temporarily to remain out of the market.

There have been many advocates of conservation of the oil supply, especially in respect to the supply reserved for the United States Navy. Three petroleum reserves have been set aside so that in time of need the Navy might have something to fall back upon if there should be any depletion in the usual sources of supply. In the spirit of this same conservation there are advocates of conservation in a more definite and dependable form than that conservation which permits the oil to remain in the ground undetermined in quantity and inaccessible for immediate use in time of need. This newer conservation favors development of the oil supply and placing it in most accessible locations where the amount, character of fuel oil and other products and time and method of getting access to it are reduced to certainty.

Storage Loss Slight

Much has been said in respect to deterioration of petroleum and its products by being in storage and the experiences of the past have been accepted as criterions of the future. The fact is with modern storage facilities the loss of fuel oil by evaporation has been reduced to one-tenth of 1 per cent a year, or to an extent that is almost negligible. This determination of loss by evaporation has been accurately ascertained. These experiments prove that fuel oil put in modern and efficient storage may be kept there for 10 years with a loss of only 1 per cent to cover that entire period.

The storage of lubricating oils is very simple and involves practically no loss at all. The storage of gasoline is, of course, the most difficult on account of its volatile nature, but even that has been reduced in the matter of loss by evaporation far beyond the experiences of 10 years ago.

These facts make it very clear that the oil industry should see that when Congress assembles in December it should be given a business-like statement of what can be done for the storage of fuel oil and other products of petroleum. When the war was on, the oil industry was called upon to cooperate with the government and it loaned its most capable, skilled experts, upon whose suggestions and advice the Government depended to put into effect a program in respect to its petroleum needs. It is now history in respect to the efficiency that was achieved by the advice of these practical men during the entire period of the World War in which the United States participated. Without this expert advice the efficiency of the armed forces of the government, particularly the Navy, would have been reduced to an alarming extent. The question has arisen now as to whether it is not worth while to call in the same class of experts to cooperate with the Navy for future needs at a time when a vast amount of money may be saved to the public.

Would Save Millions

For the purpose of the Navy the value of an immediate and adequate supply of fuel oil accessible in location, cannot be estimated. The economic value, however, attending upon such purchases at a time when there is a flood of petroleum beyond the power of the markets to consume, seems certain. There might today be made a saving of many millions of dollars compared with prices that may prevail under a scarcity of petroleum in future years.

Not only would there be a saving in public funds by storing petroleum and its products at a time of cheapness but such action would have a most important effect upon the oil industry in the Mid-Continent Fields and elsewhere. It would help to save from bankruptcy a large number of the smaller refiners and permit them to remain in business, to the financial benefit of the government by reason of their tax contributions. It would do much to prevent disasters that may cause many of these small properties to drift into the hands of larger oil operators and oil companies that will inevitably buy these bankrupt properties unless assistance is obtained from some source to keep them going.

Marine and Railroads, Too

All that has been said in the foregoing in respect to conserving future supplies of fuel oil, gasoline and lubricants for the Navy may be said with equal force in respect to the United States Merchant Marine and the railroads that use fuel oil in preference to coal.

The United States Shipping Board is now consuming about 21.000.000 barrels of fuel oil per annum. Its consumption of fuel oil is growing year by year. If the hopes and expectations of those who are supporting the American Merchant

(Continued on Page 90)

NAVY'S OIL POLICY TO BE URGED ON CONGRESS

"The total amount of reserve oil required, according to the present approved plans for the national defense, is 6,866,600 tons (48,066,320 bbls.), approximately."—Official letter from the Secretary of the Navy.

The Navy is using 7,000,000 bbls. a year.

It is sought to store 3,000,000 bbls. additional for 12 years to be added to the supply obtainable from the naval oil reserves.

Losses in storage would be fractional, it is said, compared to the economy in securihg the supply while prices are low and avoiding purchases when they are high.

Would benefit the oil industry by contributing to the stabilization of prices and setting an example to the merchant marine and railroads in assuring future supply of fuel oil.

Naval reserve of fuel oil declared essential for national defense.

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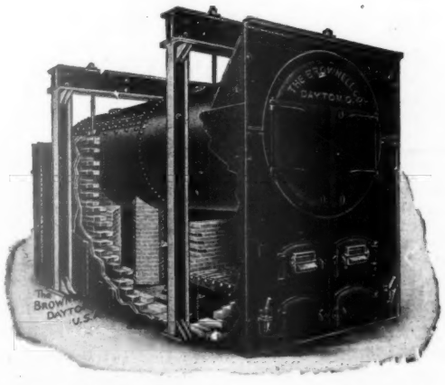

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DAYTON, OHIO, U. S. A.
ESTABLISHED 1855

BOILERS

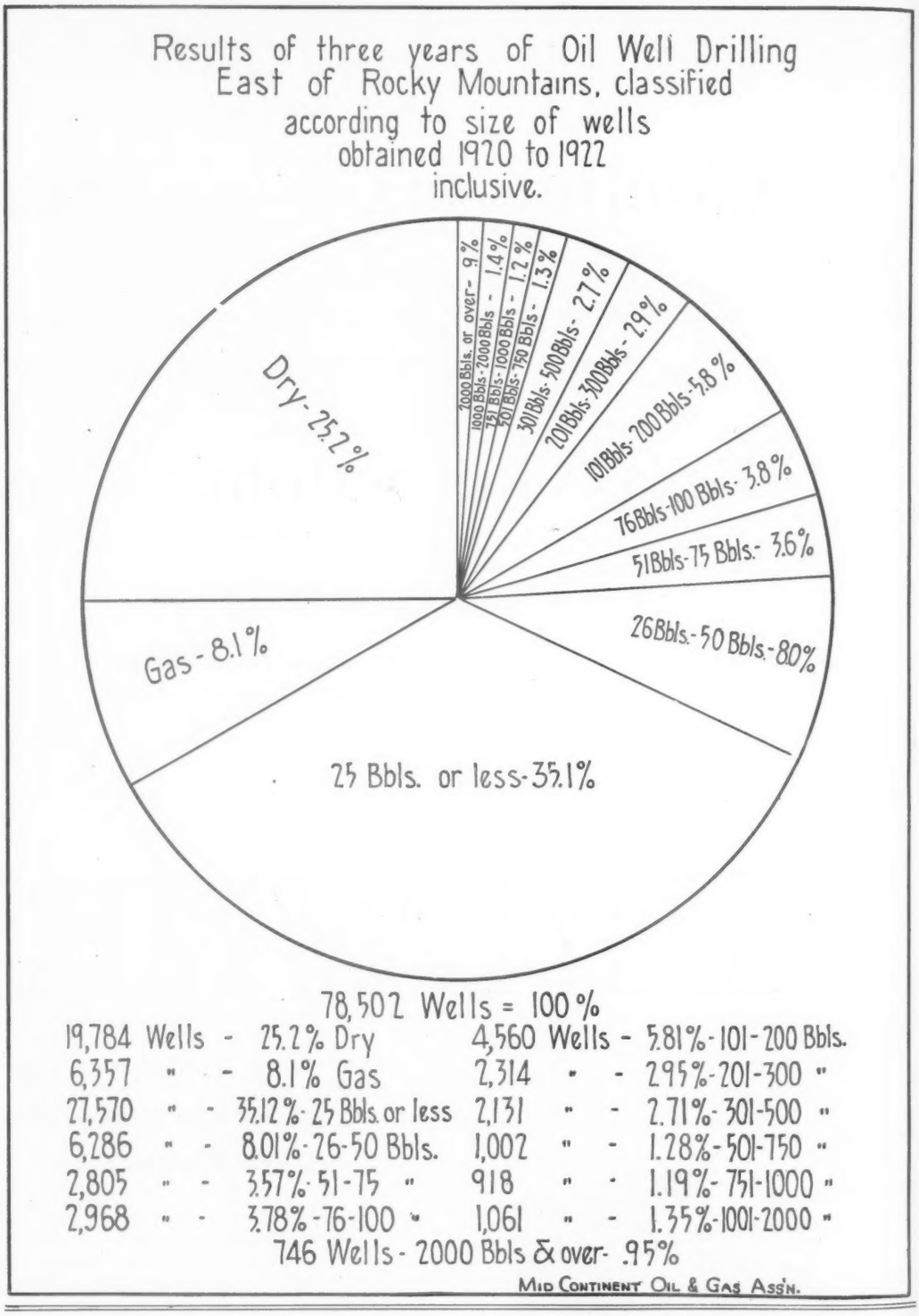
Drilling Hazards Shown by Actual Results Obtained

A careful analysis of the completion reports published monthly in The Oil and Gas Gournal has been made by the statistical department of the Mid-continent Oil and Gas Association to obtain the results of drilling east of California for the years 1920, 1921 and 1922. The result of this analysis shows that during the period named 78,502 wells were completed of which 19,784 wells or 25.2 per cent were dry; 6,357 wells or 8.1 per cent were gas wells of uncertain value and 27,570 wells or 35.12 per cent had an initial production of from 1 bbl. to 25 bbls. These figures show that 53,711 out of 78,502 completions or 68.42 per cent were either dry, gas wells or wells of less than 25 bbls. initial production.

The above graphic illustration of the analysis indicates that the number of completed wells that started at 100 bbls. or less, including gas wells and dry holes, was 65,770 or a percentage of 83.78 of all the completions. The remainder, which ran all the way from 101 bbls. up to "gushers," constitute only 16.22 per cent. There were 746 wells, or less than 1 per cent that started at 2,000 bbls. or more in the period analyzed.

In the three years covered by the statisticans a number of notably big pools were developed or in the course of development among them being those in the North Central Texas, Mexia, Texas; Orange, Hull and West Columbia extension, Texas; Haynesville, Louisiana; El Dorado, Arkansas; Elbing, Peabody, Covert and Florence, Kansas; Hewitt, Duncan; Bristow, Beggs, Deaner-Lyons, Tonkawa and Burbank and other scattered pools and with fields in Wyoming and Montana contributing to the big initial producers and yet with all these great fields, some of which caused international interest and occasioned the most intensive development the tota lnumber of so-called gusher wells constituted only 95-100 of 1 per cent.

Secretary Harry H. Smith of the Mid-Continent Oil and Gas Association caused these figures and averages to be compiled so as to be able to present to any interested persons the general results of oil operations to show the financial hazards of drilling.


Results of three years of Oil Well Drilling East of Rocky Mountains, classified according to size of wells obtained 1920 to 1922 inclusive.
Dry - 25.2%
Gas - 8.1%
25 Bbls. or less - 35.1%
26 Bbls. - 50 Bbls. - 8.0%
51 Bbls - 75 Bbls. - 3.6%
76 Bbls - 100 Bbls - 3.8%
101 Bbls - 200 Bbls - 5.8%
201 Bbls - 300 Bbls - 2.9%
301 Bbls - 500 Bbls - 2.7%
501 Bbls - 750 Bbls - 1.3%
751 Bbls - 1000 Bbls - 1.2%
1000 Bbls - 2000 Bbls - 1.4%
2000 Bbls. or over - .9%
78,502 Wells = 100%
19,784 Wells - 25.2% Dry
6,357 " - 8.1% Gas
27,570 " - 35.12% - 25 Bbls. or less
6,286 " - 8.01% - 26-50 Bbls.
2,805 " - 3.57% - 51-75 "
2,968 " - 3.78% - 76-100 "
4,560 Wells - 5.81% - 101-200 Bbls.
2,314 " - 2.95% - 201-300 "
2,131 " - 2.71% - 301-500 "
1,002 " - 1.28% - 501-750 "
918 " - 1.19% - 751-1000 "
1,061 " - 1.35% - 1001-2000 "
746 Wells - 2000 Bbls & over - .95%
Mid Continent Oil & Gas Ass'n.

GASOLINE CONSUMPTION ABOVE EXPECTATIONS

(Continued from Page 78)

it can be estimated what large amounts of money are being put into this branch of the oil business at the present time.

Export Gasoline Market

A feature of the oil export situation is the large quantity of gasoline going abroad. Despite expectations that this trade would show a falling off during the autumn, October shipments compare with the best months on record. Exporters here, however, still look for a slump, although it may not come until early next year.

The decline in gasoline export prices at New York in the past month indicates that much of the gasoline now moving abroad is in direct competition with the product shipped from this port, and therefore, that more of the product is being shipped abroad than is being currently consumed. If this is true, abnormal stocks will be built up in foreign countries, particularly Europe, which will probably mean an unfavorable export market in 1924. However, domestic oil companies cannot be blamed for trying to relieve the gasoline situation here by throwing large quantities on foreign markets.

Another phase of the gasoline export market is that many foreign distributors are generally attracted to buy when prices are low. Consumption here is not increased greatly by low prices, but the foreign market is quite different. An advance in domestic and export gasoline prices in itself, it is believed, would tend to reduce export shipments materially.

Bunker Oil Lower

The decline in the price of bunker fuel oil on the Atlantic Seaboard reflects increased receipts of Mexican oil. Heavy output of Panuco crude oil has made this possible. Although low prices for bunker oil may not be looked upon as immediately favorable, oil's advantages over coal are always emphasized when oil prices are low. The consumption of fuel oil for domestic oil burners and other purposes should be stimulated materially.

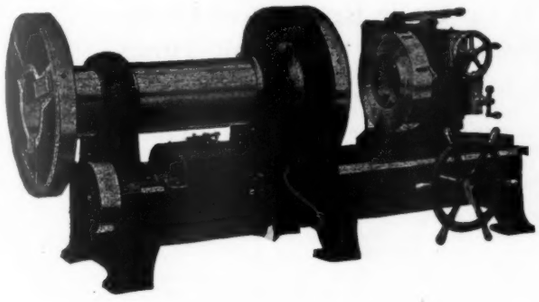
Oil Receipts Gain

Receipts of crude and refined oil at Atlantic Seaboard ports during the week ended November 23, averaged 467,000 barrels daily, contrasted with 362,000 barrels during the preceding week. Receipts were distributed about evenly as to source between the Gulf Coast, Pacific Coast and Mexico.

The following table shows estimated daily average receipts of crude and refined oil by water at the principal Atlantic Coast ports for the last two weeks, and for the months of October and September (in barrels):

	Week Ended		Month	
	Nov. 23	Nov. 16	Oct.	Sept.
New York	226,000	109,000	236,000	193,000
Philadelphia	102,000	124,000	109,000	76,000
Baltimore	41,000	40,000	41,000	59,000
Boston	.....	52,000	26,000	23,000
Fall River	.....	.....	18,000	15,000
Providence	21,000	11,000	17,000	21,000
Ngrfolk	11,000	.....	9,000	8,000
Charleston	.....	11,000	11,000	2,000
Miscellaneous	66,000	15,000	31,000	23,000
* Total	467,000	362,000	498,000	420,000

The increase in receipts at "miscellaneous ports" is accounted for mainly by Jacksonville and Savannah.



They Don't Wear Out

Have you ever experienced serious delay, or had your plant tied up entirely because your old pipe machine had something wrong with it? You can't afford to have such a machine around. It would make a good anchor for a battleship.

B & K Pipe Machines

stand the racket. That's what counts. A customer just writes: "We use pipe machines of your make, but they don't wear out."

Suppose you arrange to profit by his experience

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Historic Wells in the American Fields

Great Gushers That Made Records in Their Respective Divisions, From the Big Wells of McDonald Down to Recent Times

If gusher wells supply the romance to the oil business and dry holes the tragedy, there is little of romance in it and much tragedy. There is less than 1 per cent romance as against 25 per cent tragedy.

This is to be a story of the wells that supplied the romance to the industry—the largest wells in each of the different oil producing divisions of the United States from the days of the McDonald gushers in Pennsylvania down to recent times. It may present some surprises to many of the younger men engaged in the oil business. Present day statistics of production in Pennsylvania, West Virginia, Ohio and other Eastern States, give no indication of the resources of those fields in days gone by. It may surprise many to know that neither Kansas, Oklahoma nor North Texas, for example, ever had a well as big, or half as big, in its initial stage as one that was drilled over 30 years ago in the State of Ohio and that a brace of wells completed years before that in southwestern Pennsylvania stood as a record for high gravity crude production for a generation.

There are records of wells that have paid their owners millions of dollars in profits, while close to them were small producers that soon played out and were abandoned. These are freakish incidents. Very large producers of high gravity oil that maintain their big output over a considerable period of time are freaks as a rule. Such a well was the Gypsy Oil Co.'s No. 5 Shumway, in Butler County, Kansas, believed to have been drilled into a crevice in which an enormous quantity of petroleum had been deposited. The operator getting such a well is phenomenally fortunate in selecting the spot for his location.

Much of the information contained in this article was furnished by The Oil and Gas Journal's numerous field correspondents. Little mention is made of the many short lived wells of large initial production, like those in the Powell Field, in Navarro County and the Texas field, in Limestone County, Texas, some of which started off at an estimated production of 18,000 or 20,000 bbls. a day, but which soon settled down to a stage where interest in them was lost, and only wells are featured that had an influence on the oil business conditions of their time. Some of these historic wells opened pools; others were drilled in territory already known to be oil producers.

Oklahoma's Largest Wells

The largest producer in Oklahoma was drilled by the Gypsy Oil Co. and Frank Gillespie, No. 11 Jackson Barnett, in the southeast of the southeast quarter of Section 5-17-7, Cushing Field, Creek County, which came in February 7, 1916, at the top of the Tucker pay at the rate of 4,000 bbls. a day, gradually increasing to 300 bbls. an hour the same day and increasing the next day to an estimated production of 14,000 bbls. Much of this oil was wasted before the well was gotten under control. This is still a producer of oil after seven years and nine months. An exact record of its production has not been kept by the Gypsy Oil Co. but it is believed to have produced as much oil as the same company's No. 5 on the Shumway farm in Butler County, Kansas, which yielded 2,250,000 bbls. before it quit flowing.

The Midco Petroleum Co.'s No. 10 Benoche Fixico, Section 17-18-7, in the Cushing Field, gauged 10,484 bbls. in a day. It was another Bartlesville sand well, drilled deeper to the Tucker sand in July, 1915. The Hill Oil & Gas Co. completed a well on the Sawyer farm, in Section 27-17-7, Cushing-Shamrock Field, in June, 1916, which was estimated at 12,000 bbls. in its initial stage. It also produced 30,000,000 feet of gas a day. C. B. Shaffer drilled a 10,000-bbl. well on the Bruner farm, in Section 33-17-7, in the same month.

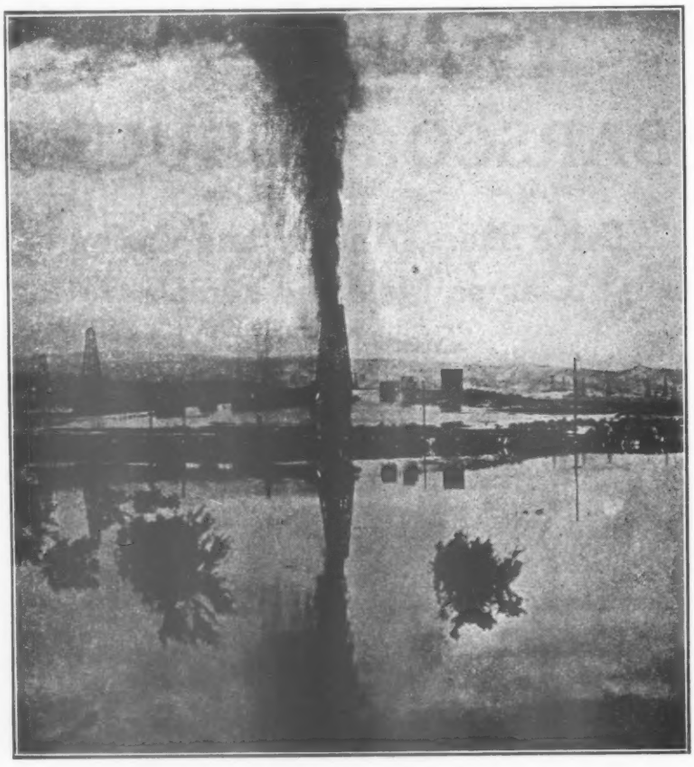
The Gypsy Oil Co.'s Boston lease, in Section 1-21-7, Osage County, showed one well that started at 8,000 bbls. from the second break in the Mississippi lime, now usually spoken of as Wilcox sand, but the biggest initial producer in Osage County was drilled in 1920 by the Minnehoma Oil Co., in Section 14-26-8, which was estimated at 14,000 bbls. a day. It was drilled to the second break in the lime and a big well was not expected. There was no way of taking care of the production and the oil ran over the adjacent prairie. By order of the Indian Agency it was shut in, and this killed it. Other wells drilled close to it never found the big production. The Mississippi lime furnished all the very large initial producers in the Osage Nation, but none of them lasted long as gushers.

The well that gauged the largest single day's production was the Carter Oil Co. and Southwestern Petroleum Co.'s No. 33 Noble, in the northeast quarter of Section 21-4s-2w, Hewitt Field, Carter County. It was an old well drilled deeper and found a sand at 2,980 feet which gauged 14,460 bbls. of pipe line oil in one day and produced 158,275 bbls. in 14 days on a wide open flow, an average of 11,305 bbls. a day, after which it was pinched in. In 35½ days it produced 261,554 bbls., a daily average of 7,382 bbls, and then was shut in. The day before it was shut in the well produced 4,633 bbls. Water had broken in from behind the casing and was cutting the oil badly. Every means known to the skilled engineers of the Carter Co. were used to shut the water off after it had been proven to the satisfaction of the production department that the water was not coming from the sand, but the work was of no avail. The well was finally plugged and abandoned and a twin well started. There are 10 wells close by drilling for this same sand, of which the Carter is drilling five. They may be shut down on top of the sand until better market conditions prevail.

A notably big initial producer was the Roland Oil Co.'s No. 1, in the southwest quarter of Section 2-15-8, Bristow Field, Creek County, which was estimated all the way from 12,000 to 20,000 bbls. a day, from the Dutcher sand. This well produced about 500,000 bbls. of crude and then quit. One of the offsets to it found only salt water in the same sand.

The Shumway Gusher

The Tonkawa Field in Butler County, supplied all the very large initial producers in Kansas. The Gypsy Oil Co. on September 8, 1917, brought in its No. 5 Shumway, in Section 11-26-4, the well starting off at 15,000 bbls. a day. It produced 10,000 bbls. a day for months and by the time it quit flowing had produced 2,250,000 bbls., making it one of the largest wells ever developed in this country. The same company's No. 13 Shumway was a 17,000-bbl. well in its initial stage, but it soon fell off. The Trapshooter Oil Co. and the Empire Gas & Fuel Co. are also credited with wells starting around 15,000 bbls. but they were of short life as gushers. The Towanda Field came into being in the early summer of 1917 and yielded many big wells before it began to decline in 1918. It is producing comparatively little oil at this time.



The Union Oil Co.'s No. 1 Lakeview, taken over by that company as an apparently hopeless hole, had initial production of 75,000 bbls. daily.

Among the many large wells drilled in the North Central Texas Field in the boom days of 1920 and 1921 it is generally agreed that the premier performer for initial production and for a period of 30 days, was the Gulf Production Co.'s No. 2 K. Stoker, northeast corner of the southeast quarter of Section 20, Lunatic Asylum lands, 2 miles south of Breckenridge. It was a semi-wildcat, the nearest producer being the same company's No. 1 Stoker, a quarter of a mile south, which was only a 50-bbl. well at its completion. No. 2 was completed at about the same depth as No. 1. It made 515 bbls. the first day but was drilled a foot deeper and then flowed 14,000 bbls. the following 24 hours and produced over 300,000 bbls. of oil in 30 days. It held up its production remarkably well and has produced over 1,000,000 bbls. of oil, worth over $2,000,000, and was flowing 75 bbls. a day with some gas and water not long ago. The gravity of the crude was above 38 degrees. The sand lay at 3,075-90 feet, the production being the regular Caddo gray lime.

The largest North Central Texas producer was drilled by the Plateau Oil Co. one-half mile southeast of Breckenridge, Stephens County. It was No. 1 on the Ward farm, an 80-acre lease. It came in May 23, 1920, and flowed 4,800 bbls. the first day and averaged that quantity of crude daily for 12 months and was making 5,000 bbls. a day at the close of the year. Three years later the well was flowing 105 bbls. of oil, 600 bbls. of water and producing 3,000,000 feet of gas. The oil was of 38 gravity. It got sand at 3,070-80 feet, a gray lime formation. This well produced up to June of this year 448,408 bbls., which was worth $3,258,918. This was a crevice well. Three other wells were completed on the lease, the largest being No. 3, which started at 900 bbls. The other wells were long since abandoned. Offsets drilled by The Texas Co. and the Gulf Production Co. were small wells and had no effect on the production of the Plateau Oil Co.'s freak producer.

Gulf Coast Had Many

Big wells have been common to the Gulf Coast Field ever since the early days of Spindletop, near Beaumont, the original Gulf coastal field, opened in 1901. The discovery well drilled by Captain Lucas was credited with a 50,000-bbl. initial production but a well drilled by Heywood Brothers was said to have produced as much as 90,000 bbls. per day. These were very likely greatly exaggerated as there was no way of correctly gauging the gushers.

The Jennings, La., pool opened in 1902 boasted of one 10,000-bbl. well, the Jennings Oil Co.'s No. 5. The Wilkins Co.'s No. 2 Latrielle produced over 2,500,000 bbls. in 1905 before it quit flowing. It started at 7,000 bbls. Heywood Brothers' No. 4, starting at 1,000 bbls., produced over 1,000,000 bbls. before it quit flowing.

The Sour Lake Pool started off in 1903 with big wells but its largest initial producers came in 1913 when completions as high as 15,000 bbls. were reported and in 1917 the Gulf Production Co. and Humble Oil & Refining Co. brought in a 15,000-bbl. producer in No. 15 Hardin on the north side of the pool and the Yount Lee Oil Co.'s No. 6 Merchant was good for 12,000 bbls.

In the Saratoga Pool in 1904 the Producers Oil Co.'s No. 84 came in at 10,000 bbls. and later the Austin Oil Co.

Formerly gas mingled with the oil from flowing or pumping wells was considered a liability, but now it is an asset—because the methods available for handling it have been made entirely practical, particularly the Smith Separator which insures a complete separation of the oil and gas.

The Smith Separator, by preventing the release of the volatile

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SMITH OIL AND GAS SEPARATOR

content, increases the value of the oil to a marked degree.

One of the largest producers in the Oklahoma and Texas fields has a Smith Separator that saves its cost every fifteen days. Every penny was being wasted before its installation.

The Smith Separator is sold under a positive guarantee to completely separate your oil from your gas—or your money back.

SMITH SEPARATOR COMPANY
TULSA, OKLA.

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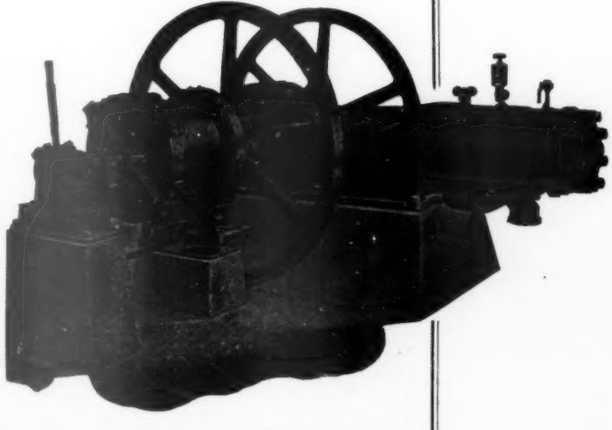

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completed No. 1 Moore with an initial production of 12,000 bbls., but it sanded.

The Humble Pool also had its share of gushers, the largest having been a deep sand well of the Farmers' Petroleum Co., No. 16 Stevenson, completed in 1915 with a production of 24,000 bbls.

The shallow sand Batson Pool opened in 1903, developed a number of very large initial producers, the largest having been the Paraffine Oil Co.'s No. 3, rated at 15,000 bbls.; Guffey Petroleum Co.'s No. 1 Brill, 18,000 bbls., and the Prairie Oil Co.'s No. 1 Brill, 12,000 bbls., the last named going to water in less than a month. In 1904 the Producers Oil Co.'s No. 1 Moonshine started at 28,000 bbls.

The Vinton, La., pool, opened in 1908, furnished 30 wells that ranged from 4,000 to 13,000 bbls. a day from 1910 to 1918. The Vinton Petroleum Co.'s 20-acre Gray lease has produced for 15 years and is still averaging 3,000 bbls. a day.

In the more modern Goose Creek Pool, a deep sand was found in 1916. The best well in that field was drilled in 1917 by E. F. Simms & Co., No. 11 Sweet, credited with an initial production of 35,000 bbls.

In the West Columbia Pool, the Humble Oil & Refining Co.'s No. 1 Gireaud completed a well at 3,030 feet which started at 7,000 bbls. and increased to 10,000 bbls. This was in 1918 and the following year a 10,000-bbl. well was completed at 3,050 feet by The Texas Co. in its No. 2 Arnold. These were on the south side of the dome. Later the Humble Oil & Refining Co., on the Japhet 20 acres, on the east side of the dome, brought in an 18,000-bbl. initial producer. In the Pierce Junction Pool, Snowden & McSweeney's No. 1 Cain, completed in July, 1921, flowed 100,000 bbls. in a month, while R. E. Brooks completed another as good in No. 1 Howe, and the Texas Exploration Co.'s No. 4 Dooley was a 6,000-bbl. well.

The best well in the Orange Pool was the Humble Oil & Refining Co.'s No. 5 Chesson, which produced 400,000 bbls. before it sanded up at the end of 26 days. The Sun Oil Co.'s No. 3 Gunstream got a sand at 3,450 feet which yielded 210,000 bbls. in 35 days and was still going strong at the end of that time.

Great Wells in Old Penn Field

Greenlee & Forst drilled the biggest initial producer ever finished in Pennsylvania, on the James Meavey farm, 2 miles west of Oakdale, in the McDonald Field, Allegheny Couny. It was drilled into the Fifth sand at a depth between 2,400 and 2,500 feet on September 26, 1891, and started at 150 bbls. an hour, increasing this shortly to 650 bbls. an hour. The gusher production was altogether unexpected and for the two days the well flowed wild and only a part of the oil was saved by throwing a dam across a run that led to Robinson Creek. Most of the crude went down the creek. When placed under control it made 14,000 bbls. a day. This well did not hold up long as a big producer because of pipe trouble. It is now owned by the South Penn Oil Co. and is good for half a barrel a day.

The largest producer of oil was J. M. Guffey, Michael Murphy and Jennings Brothers' No. 1 J. J. Matthews, located in the McDonald Field, which was drilled in on July 5, 1891. It started at 40 bbls. an hour but when drilled deeper it flowed with such force that it tore off the casing head and for two days was beyond control. When an accurate gauge could be taken the well demonstrated a production of 500 bbls. an hour and it was estimated as a 12,000-bbl. well. It went off quickly and made 60,000 bbls. in 42 days and is now pumping six bbls. a day. It is owned by Jennings Brothers.

42,000-Bbl. Well in Ohio

The largest initial producer in the Central West Fields was drilled in July, 1891, by the Ohio Oil Co., its No. 1 Hugh McMurray, which was an 80-acre lease in the southwest quarter of Section 11, Allen Township, Hancock County, Ohio, 3 miles south of North Baltimore and 1½ miles west of Van Buren. The well found pay sand at 1,200 feet and at first was a monster gasser with the tools stuck in the hole. When they were loosened the tools were blown into the air. It took four hours to shut the well in and when it began to produce oil it started at 4,250 bbls. an hour and averaged 4,000 bbls. an hour for the first four hours. It was reported at the time as a 42-000-bbl. well and even now, after a lapse of over 30 years, it is still spoken of as a 40,000-bbl. well. The oil was badly cut after the heavy flows due to the tremendous water pressure. It produced an immense amount of crude before it was abandoned some years later.

Another notable well in the same field was that of T. E. and J. N. Kirkbride on the Benjamin Jones farm, in Madison Township, Sandusky County, Ohio, 4 miles west and 1 mile sout hof Gibsonburg, which had a flush production of 20,000 bbls. and averaged 7,000 bbls. a day for 30 days.

Wood County, Ohio, supplied many big wells, but the largest was Sam E. Neice's No. 1 Ducat, in Henry Township, which started at 10,000 bbls. and Smith & Zeigler's No. 1 Dustman, Henry Township, also a 10,000-bbl. initial producer.

West Virginia's Best Well

West Virginia's largest well was the property of the South Penn Oil Co., No. 1 Copley heirs farm, on Sand Fork, Courthouse district, Lewis County, 10 miles southwest of the town of Weston. It was a wildcat test and opened the Sand Fork Pool, which broke the crude market.

On September 23, 1900, the well was drilled into the Gordon sand, found at a depth of 2,530 feet. It began showing oil in the top of the sand and work was shut down pending the erection of tankage. The well drilled itself in and began flowing at a tremendous rate and for several days the oil flowed into Sand Fork Creek, across which a dam was constructed some distance from the well. The nearest pipe line was 32 miles away and the company, under the management of the late Glen T. Braden, began erecting tanks. Seventy-five 250-bbl. tanks were provided, the work of installing them being carried on night and day, while at the same time, under the direction of the late H. L. Scrafford, the Eureka Pipe Line Co. laid a line to the well in record-breaking time. While no accurate gauge was taken on this well, it was conservatively estimated at 5,000 bbls. and maybe did 10,000 bbls. at its best. This well is still producing.

West Kentucky's Best Shallow Wells

The largest initial producer in the Western Kentucky Field is a matter of debate. Many operators give the credit to the Illinois Oil Co.'s No. 1 Harrison Shannon, Rockfield district, Warren County. On October 19, 1921, at a depth of 485 feet, the top of the sand was struck and the well made 2,500 bbls. the first day. On November 7 it was flowing 700 bbls. a day. After 30 days the tools were removed from the hole and the well pumped 500 bbls. It made 60,000 bbls. up to January 2, 1922. In February it was pumping 100 bbls. a day. It is now good for 10 bbls. daily.

O. J. Daugherty's No. 1 General Seibert, in the Davenport Pool, started at 200 bbls. an hour and flowed 10,000 bbls. in all. This was a Mississippi lime well.

The best well in the sand below the shale was Butler Brothers and others' No. 1 Phillips, in the Moulder Pool, Eastern Warren County. It came in in the spring of 1919, estimated at 3,000 bbls. The Seaboard Oil Co.'s No. 23 Angie McReynolds, in Allen County, started at 1,500 bbls. in September, 1919, and in five weeks was yet making 500 bbls. a day.

47,000 Bbls. a Day

Unquestionably the most important well in the entire history of the north Louisiana territory was completed on May 12, 1911, about six years after the discovery of oil in the northern part of this State. The well was brought in by the Producers Oil Co. and is now known as No. 7 Harrell and owned by The Texas Co. The well is located 1,534 feet north and 1,121 feet east of the southwest corner of Section 4-21-16, Caddo Parish, and is making 100 bbls. of oil today. Drilling was started March 25, 1911. There was no one present except the crew when the well came in while bailing at 2,394 feet.

The well caught fire when it came in, probably through the first gas flow coming in contact with fire in the forge. This fire was a much more serious problem then than it would be today and defied all efforts to extinguish, including the use of steam from a battery of 40 or 50 boilers. At cannon was brought from Houston and an effort made to shoot off the gate valve in the belief that the fire fighters would have a better chance for success if the flow was perpendicular. A tunnel was finally started 500 yards from the well and under cover of this the casings were perforated with a tubular drill through which a combination of asbestos, mud and water was pumped until the fire was finally conquered.

Derrick was rebuilt and the well completed with a production at the time estimated at 47,000 bbls. That this is conservative is evidenced by the fact that one hour's flow was gauged at the rate of 40,000 bbls. a day and while this was being taken a great quantity was escaping and failing to register.

In these days of a superabundance of low gravity oil the completion of a well like Harrell No. 7 would be a bonanza for its owners for the oil was of 45 gravity.

Homer's Prize Producer

The biggest well in the Homer Field was one that had been abandoned as a failure. The Standard Oil Co.'s No. 2 Guy Oakes, northwest corner of the southwest quarter of Section 29-21-7, Claiborne Parish, was started on May 17, 1919, and abandoned at 1,598 feet as a dry hole. Then "Bill" Rowe demonstrated the possibilities of deeper drilling thereabouts, whereupon Standard returned to its supposed failure, which had not been plugged, and drilled it deeper, finding the big pay at 2,069 feet on August 8, 1919. This well gauged at the rate of 32,000 bbls. a day for short periods. When it was provided with pipe line outlet the well made 20,000 bbls. a day of 37 gravity oil. It is still producing about 80 bbls. a day.

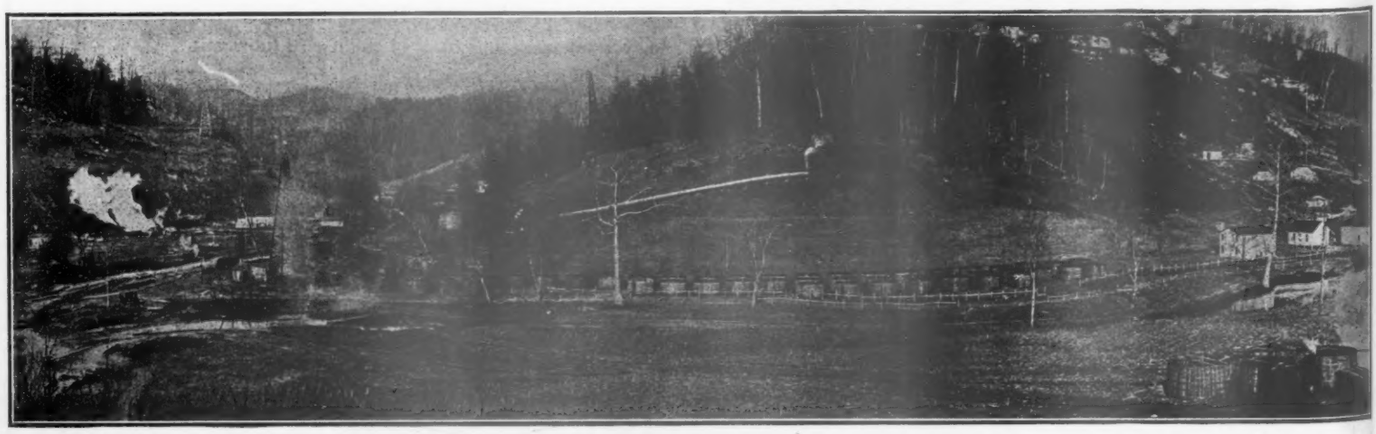
Smackover's Biggest Well

Credit for the original Smackover, Ark., discovery is held by the V. K. F. Oil Co., which completed No. 1 Richardson, in the extreme southeast corner of the northeast quarter of Section 29-15-15, early in August, 1922, at a depth of 2,066 feet with 300 bbls. production.

The tremendous later production of this area was not fully demonstrated until March 23, 1923, when the Burton trustees completed No. 1 Hughes in the center of Section 28-15-16, Ouachita County. The well was looked upon as a gasser, having tested 15,000,000 feet of gas on January 24, 1923, and was held

(Continued on Page 96)

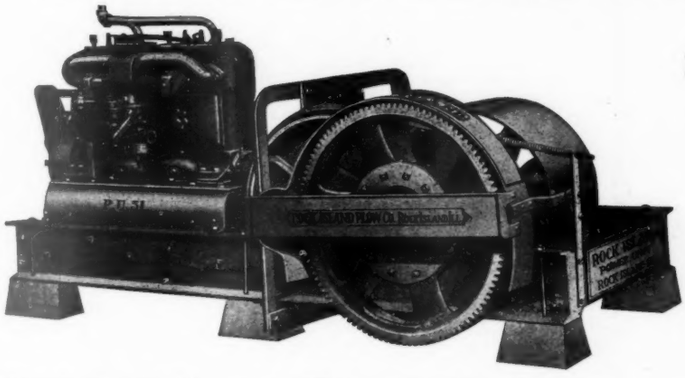
COPLEY WELL IN WEST VIRGINIA REQUIRED SEVENTY-FIVE 250-BBL. TANKS



When the South Penn Oil Co.'s No. 1 Copley on Sand Fork Creek, Lewis County, West Virginia, came in on September 23, 1900, and began flowing at the rate of from 5,000 to 10,000 bbls. a day, there was no provision for storage. The creek was dammed and used as a reservoir until the late Glen Braden and his men provided the battery of 75 250-bbl. tanks shown in the above picture, which served until the Eureka Pipe Line Co. in record breaking time laid 32 miles of line to the well. This was the largest producer ever drilled in West Virginia

THE ROCK ISLAND PUMPING ENGINE

It Pumps—Pulls Rods and Tubing—Bails or Handles a Light String of Tools



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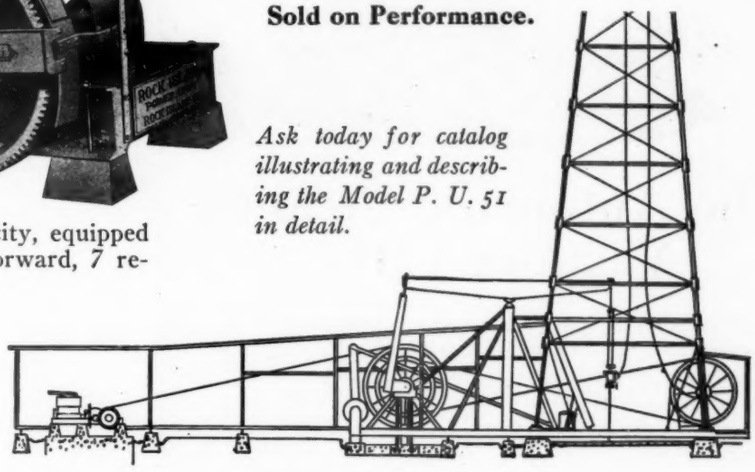
Complete control from Well Platform.

Built for the Job.

Sold on Performance.

Ask today for catalog illustrating and describing the Model P. U. 51 in detail.



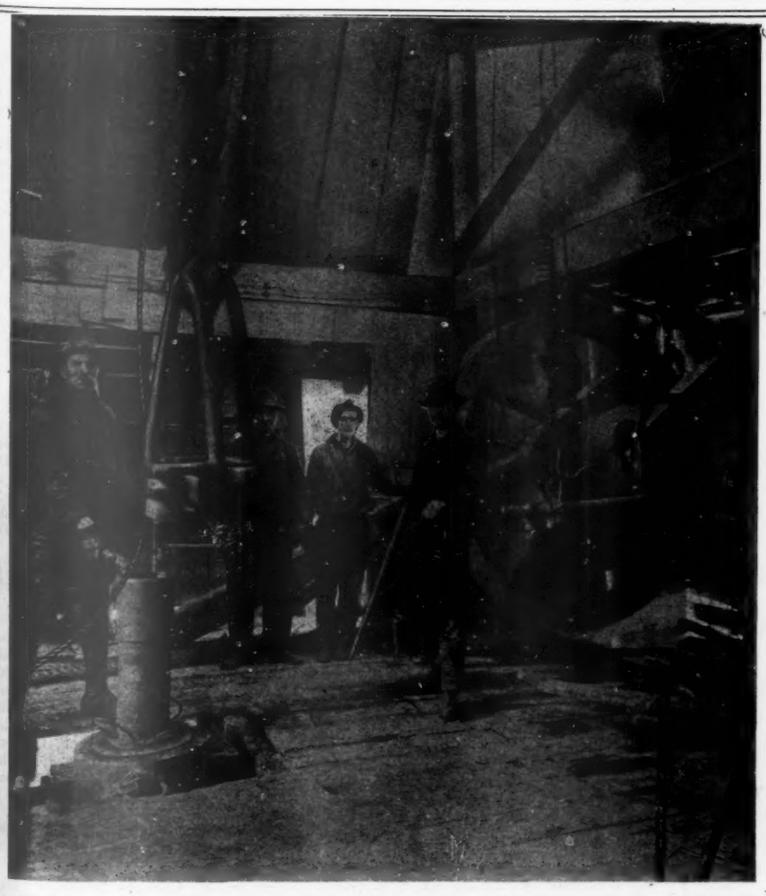
Sturdy 4-cylinder motor, 25 h.p. capacity, equipped with friction transmission, 7 speeds forward, 7 reverse; requires less attention from operator; less repairs, fuel and oil.

No reverse gears or jaw clutch to adjust or repair.

Simple construction, easily understood by average operator.

ROCK ISLAND PLOW COMPANY, ROCK ISLAND, ILLINOIS

P. O. Box 289 **C. F. Camp, Agency, Distributors** **Tulsa, Oklahoma, 311 Atco Bldg.**



WICKWIRE WIRE LINES

A 1-inch Wickwire Drilling Line running an 8 1-4 inch casing at 1950 feet in the Tonkawa Field.

Quality and dependability are the features of Wickwire Wire Lines that insure unequaled service.

Wickwire Spencer Steel Corporation

41 E. Forty-second Street, New York

EASTERN DISTRIBUTORS:

New Martinsville Supply Co., New Martinsville, W. Va. Woodsfield, Ohio, Waynesburg, Pa., Washington, Pa.
A. F. Keck & Co., Butler, Penn.
H. B. Mitchell Co., Emlenton, Pa.
Clarion County Machine Co., Knox, Pa.
Lloyd Smith Co., Bradford, Pa.

WESTERN DISTRIBUTORS:

Murray Tool & Supply Co., Cleveland, Tulsa, Pawhuska, Burbank Field, Ponca City, Marland, Morrison, Cushing, Yale, Weleetka, Okmulgee, Bristow, Okla., and Madison, Kans.
Keystone Pipe & Supply Co., Fort Worth, Breckenridge, Wichita Falls and Graham, Tex.

GAS-TITE DEVICE

The Automatic Pressure Vacuum Valve

Made entirely of aluminum and brass, easy to install. Has no gaskets. Valves always work. Pressure valve releases at 2¼ ounces. Vacuum valve releases at ½ ounce vacuum. Equipped with brass wire gauze fire arrestors, efficient, serviceable, permanent — a big money saver.

Gas-Tite Man Holes and Thief Rings

Gas-Tite Man Hole and Thief Hole Covers Insure Your Tanks Being Permanently Gas Tight. Both covers made of aluminum with smooth machined surface which form gas-tight seal when in contact with gasket.

SHIPPED READY TO INSTALL. Comes complete with bolts, nuts, proper sized gasket with holes punched in, nipples, etc. When hole is made all you need to install it with are a screw driver and a monkey wrench.

ASK YOUR TANK BUILDER. Your tank builder knows and will be glad to install them for you—because they are 100 per cent assurance that the tanks they build are actually gas-tight.

THE GAS-TITE DEVICE CO.

PAWHUSKA, OKLAHOMA

NORTH CENTRAL TEXAS

(Continued from Page 44)

son, at 415 feet; Kentucky Oil Corp.'s No. 2 Wilson, at 215 feet; Lane and others' No. 2 Parrish, shut down for orders on top of an oil sand at 1,393 feet; Lynch and others' No. 1 Birdwell, trying to pull 6⅝-inch casing at 1,320 feet; Morris and others' No. 1 Wilson, drilling in rock at 1,165 feet; Murchison and others' No. 1 White, drilling at 815 feet; Oil Investment Co.'s No. 2-B Parrish, ratholing at 1,555 feet; No. 3-B Parrish, drilling at 1,110 feet; Shamrock Oil Co.'s No. 4 Richardson, drilling in brown shale at 1,205 feet; Sibley and others' No. 5 Wilmot, rigging to pump an oil sand at 1,590 feet; No. 6 Wilmot, ratholing at 1,560 feet; Staley and others' No. 4 Carter, setting 6⅝-inch casing at 1,567 feet; Sun Oil Co.'s No. 3 Farmer, drilling at 915 feet; Swastika Oil Co.'s No. 9 Richardson, having water trouble from a sand at 1,565 feet; No. 1 Neal, shut down for cable tools at 2,950 feet; Underwood Drilling Co.'s No. 2 Wilmot, drilling in rock at 985 feet; Dr. Wallace's No. 16 K. & K., drilling in brown shale at 1,815 feet.

Young County

Completions: Bullington and others' No. 1 Mankins, dry at 1,327 feet; Dudley Miller's No. 2 Hughes, 8,000,000 feet of gas at 2,400 feet.

Drilling: Byrens and others' No. 1 Mahoney, running 5⅞-inch casing at a total depth of 3,933 feet; Calmo Oil Co.'s No. 5 Moren, estimated production of 50 bbls. at 2,250 feet; drilling at 2,390 feet; Gulf Production Co.'s No. 2 Hockaday, drilling by tools at 3,305 feet; McGuire and others' No. 1 Carter, fishing for casing at 1,875 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Gibson, sidereaming with 1,000 feet of oil in the hole from a lime at 3,750 feet; No. 1 Moren, underreaming 10-inch casing at 1,770 feet; Robinson and others' No. 1 Grubbs, drilling in soft rock at 2,415 feet; Seaboard Oil & Gas Co.'s No. 4 Hughes, swabbed 75 bbls., shut down for orders at 2,575 feet; Smith and others' No. 1 Benson, preparing to pump a sand showing considerable oil at 895 feet; Snowden and others' No. 1 Carter, underreaming 8¼-inch casing at 1,865 feet; Weekly and others' No. 3 McLaren, drilling in brown shale at 1,380 feet; Whitehead and others' No. 1 Graham, drilling at 265 feet; No. 1 Johnson, running 6⅝-inch casing at 4,229 feet.

Eastland County

Completions: Gholson and others' No. 2 Shugart, 20 bbls. at 2,875 feet; Humble Oil & Refining Co.'s No. 3 Merrill, 60 bbls. at 1,225 feet; Kokomo Oil Co.'s No. 1 Parrish, dry at 3,240 feet; Magnolia Petroleum Co.'s No. 3 Ross, 20 bbls. at 2,830 feet; Knight and others' No. 3 Underwood, 30 bbls. at 2,495 feet.

Drilling: Clayton and others' No. 1 steel, drilling at 2,200 feet; Eby and others' No. 5 Miller, set 8¼-inch casing at 2,300 feet; Harrell and others' No. 1 Mahan, drilling in shale at 2,485 feet; Magnolia Petroleum Co.'s No. 3-A Rogers, underreaming 6⅝-inch casing at 2,805 feet; No. 14 Westmoreland, drilling in hard rock at 2,025 feet; Panhandle Refining Co.'s No. 6 Hightower, drilling at 965 feet; Rosenfield and others' No. 1 Gilbert, to start drilling this week at 500 feet; Clayton and others' No. 1 Rio Bravo, drilling in brown shale at 1,875 feet; Root and others' No. 1 Walker, drilling at 2,480 feet; Rosenfield and others' No. 1 Burnett, fishing for casing at 2,110 feet; Texas Development Co.'s No. 1 Lewis, sand at 1,605 to 1,609 feet, showing 5,000,000 feet of gas.

Stephens County

Drilling: Ewing and others' No. 1 Martin, pulling big pipe, total depth 3,100 feet; Mid-Kansas Oil & Gas Co.'s No. 2 Cougher, fishing for casing at 3,150 feet; McClain and others' No. 1 Hill, drilling in lime at 2,645 feet; Texas Consolidated Oil Co.'s No. 5 Martin, showing oil and gas and drilling at 3,925 feet; Weekly and others' No. 2 Martin, drilling at 3,545 feet; Humble Oil & Refining Co.'s No. 1 Wild, shot at 3,600 feet with no show of oil, showing some water, will probably be abandoned at 3,650 feet; Magnolia Petroleum Co.'s No. 4 Brown, drilling with a hole full of water at 3,350 feet; No. 2 George, 200 feet of oil in the hole, will pump and test at 2,635 feet; No. 12 Rush, drilling in blue shale at 2,505 feet; No. 4 Walker, drilling in hard rock at 2,575 feet; Mahlstedt & Mook Oil Co.'s No. 1 Boyett, mudding off gas at 2,560 feet; Prairie Oil & Gas Co.'s No. 1-B Brown, a show of oil and drilling in lime at 3,305 feet; Rosser and others' No. 5 Jones, spudding. Royal Palm Oil Co.'s No. 1 Newham, has a crooked hole at 3,260 feet; No. 5 Henderson, spudding; Sinclair Oil Co.'s No. 3 Ashmore, running 10-inch casing at 960 feet; Texas & Pacific Coal & Oil Co.'s No. 40 Binney, rigging up to drill deeper at 1,787 feet; Walker & Caldwell Oil Co.'s No. 14 Walker Caldwell, has 1,000 feet of oil in the hole and drilling in gray lime at 3,285 feet.

Wildcats

Palo Pinto County—Completions: Cunningham and others' No. 1 Poer, dry at 4,220 feet; Ligon and others' No. 1 Carter, dry at 3,505 feet.

Drilling: Pender Production Co.'s No. 1 Slemmons, drilling in hard lime at 3,950 feet; Texas Pacific Coal & Oil Co.'s No. 1 Robinson, fishing for tools at 3,580 feet; No. 14 Stuart, will drill deeper at 1,630 feet; Thomas and others' No. 1 Thomas, cleaning out with a little show of oil at 3,590 feet; Costello and others' No. 1 Costello, drilling at 1,305 feet; Dalton Oil Co.'s No. 5 Dalton, has 2,500 feet of oil in the hole and shut down at 4,058 feet; Jones and others' No. 1 Jones, drilling at 1,255 feet; Nelson Oil Co.'s No. 2 Finch, at 4,155 feet; Simms Oil Co.'s No. 1 Costello, at 3,300 feet; Singleton and others' No. 1 Holt, at 2,200 feet; Zada Bell Oil Co.'s No. 1 Weldon, drilling in blue shale at 2,905 feet.

Mitchell County—Completions: Henry Reilly's No. 1 Morrison, 60 bbls. at 3,045 feet.

Drilling: Fensland Oil Co.'s No. 1 Badgett, a small show of oil at 2,970 feet; Kelsey and others' No. 1 Badgett, shot and now cleaning out at 3,120 feet; Sloan and others No. 1 O'Neil, cleaning out after a shot at 3,110 feet; No. 2 Smart, drilling at 255 feet; California Co.'s No. 1 Morrison, shut down waiting on cement to set at 3,925 feet; Underwriters Producing & Refining Co.'s No. 5 Morrison, cleaning out at 3,105 feet.

Shackelford County—Drilling: Beggs and others' No. 1 Parrish, fishing for casing at 1,600 feet; Humble Oil & Refining Co.'s No. 1 Elliott, underreaming 12½-inch casing at 975 feet; No. 1-E Poindexter, drilling with a hole full of water at 1,045 feet; Landreth Producing Co.'s No. 2 Lynch, fishing for casing at 3,388 feet; No. 14 Poindexter, drilling at 1,780 feet.

Clay County—Drilling: Gulf Production Co.'s No. 1-A Boddy, drilling in soft rock at 2,585 feet; No. 3 Worsham, spudding at 75 feet; Knox & Finley Development Co.'s No. 1 Scott, testing on the pump a sand showing some oil at 1,150 feet; Nebraska Oil & Gas Co.'s No. 1 Myers, shut down for fishing tools at 3,380 feet.

Cooke County—Drilling: Big Indian Oil Co.'s No. 1 Davis, drilling at 2,825 feet; Red River Drilling Co.'s No. 1 Jones, drilling at 1,265 feet.

Montague County—Drilling: The Texas Co.'s No. 1-A Gist, 10-inch casing stuck, working to move same at 857 feet; Amerada Oil Co.'s No. 1-A Beasley, drilling a water sand at 2,725 feet; Gulf Production Co.'s No. 1-A Benton, underreaming 8½-inch casing at 2,465 feet; Mascho Oil Co.'s No. 1 Howard, drilling in brown shale at 1,705 feet; Texhoma Oil Co.'s No. 1-A Crenshaw, drilling in blue shale at 2,165 feet.

Throckmorton County—Drilling: Monroe Production Co.'s No. 1 Ray, spudding.

Armstrong County—Drilling: Magnolia Petroleum Co.'s No. 1 J A. Ranch,

drilling in a broken lime and blue shale at 2,805 feet.

Carson County—Drilling: The Texas Co.'s No. 3-A Burnett, drilling a water sand at 100 feet; Culberson Brothers' No. 1 Armstrong, shut down for 15-inch casing at 200 feet; Gulf Production Co.'s No. 3-A Burnett, pulling 5-3/16-inch casing at 3,145 feet; Humphreys Oil Co.'s No. 1 Sandford, fishing for a string of tools at 2,530 feet; Silk and others' No. 3 Burnett, rigging up; Tipton, Stone's No. 1 McConnell, blew off control head at 3,030 feet.

Collingsworth County—Drilling: Campbell and others' No. 1 Stokley, cleaning out at 1,680 feet.

Dallam County—Drilling: Kellerman and others' No. 1 James, drilling by junk at 1,640 feet.

Gray County—Drilling: The Texas Co.'s No. 1 Saunder, drilling at 1,735 feet; Holmes and others' No. 1 Moore, drilling in red beds at 900 feet.

Hutchinson County—Drilling: Coline Oil Co.'s No. 1 Sandford, fishing for tools at 3,185 feet; Humphries Oil Co.'s No. 1 Johnson, fishing for a bit at 2,585 feet; Montgomery and others' No. 1 Johnson, running 10-inch casing at 1,520 feet; McGee and others' No. 1 Smith Capers, trying to pull 6⅝-inch casing at 3,175 feet; O'Guinn and others' No. 1 Johnson, tools in the derrick; Producers & Refiners Oil Corp.'s No. 1-B Bivens, underreaming 12½-inch casing at 800 feet.

Potter County—Drilling: Producers & Refiners Corp.'s No. 2 Masterson, drilling in brown rock at 2,605 feet; No. 1-A Bivens, shut down for orders at 2,270 feet; No. 2-A Bivens, underreaming 12½-inch casing at 810 feet.

Wheeler County—Drilling: Tyrrell and others' No. 1 Sheldon, fishing for tools at 970 feet.

PRODUCTION REPORT

Week Ending November 22, 1923

Burkburnett

American Refining Co.	280
Barkley & Meadows	2,080
Humble Oil & Ref. Co.	650
Gulf Production Co.	1,685
Magnolia Petroleum Co.	3,765
Middle States Oil Co.	230
McMahon Oil Co.	570
Panhandle Refining Co.	460
Sinclair Oil & Gas Co.	60
The Texas Co.	680
Texhoma Oil & Ref. Co.	565
Miscellaneous	11,955
Total	22,980

Electra

Empire Gas & Fuel Co.	1,635
Humble Oil & Ref. Co.	130
Griswold Oil Co.	585
Gulf Production Co.	985
Magnolia Pet. Co.	5,230
Middle States Oil Co.	150
McMahon Oil Co.	225
The Texas Co.	5,175
Texhoma Oil & Ref. Co.	2,440
Miscellaneous	5,370
Total	21,925

Iowa Park, Archer County and Petrolia

Iowa Park—	
American Refining Co.	40
Griswold Oil Co.	30
Gulf Prod. Co.	60
Texhoma Oil & Ref. Co.	45
Miscellaneous	1,980
Archer County—	
American Refining Co.	335
Griswold Oil Co.	530
Gulf Production Co.	380
Humble Oil & Ref. Co.	75
The Texas Co.	860
Texhoma Oil & Ref. Co.	2,030
Miscellaneous	13,520
Petrolia—	
Gulf Production Co.	100
Magnolia Pet. Co.	50
The Texas Co.	95
Miscellaneous	170
Total	20,300

Stephens County

Empire Gas & Fuel Co.	70
Gulf Production Co.	1,635
Humble Oil & Ref. Co.	1,210
Magnolia Petroleum Co.	1,085
Mid-Kansas Oil & Gas Co.	1,800
Prairie Oil & Gas Co.	1,025
Sinclair Oil Co.	110
The Sun Co.	900
The Texas Co.	2,945
T. & P. Coal & Oil Co.	1,300
Miscellaneous	10,615
Total	22,695

Eastland County

Empire Gas & Fuel Co.	25
Gulf Production Co.	660
Humble Oil & Ref. Co.	95
Magnolia Petroleum Co.	560
Mid-Kansas Oil & Gas Co.	35
Panhandle Refining Co.	430
Prairie Oil & Gas Co.	800
Sinclair Oil Co.	470
The Sun Co.	15
The Texas Co.	310
Miscellaneous	3,910
Total	7,310

Other Fields

Strawn—	
T. & P. Coal & Oil Co.	315
Miscellaneous	465
Moran—	
Empire Gas & Fuel Co.	190
Humble Oil & Ref. Co.	600
The Texas Co.	160
Texhoma Oil & Ref. Co.	230
Miscellaneous	2,480
Coleman County—	
Miscellaneous	115
Brown County—	
Miscellaneous	455
Comanche-Eastland—	
Humble Oil & Ref. Co.	370
Empire Gas & Fuel Co.	15
Magnolia Pet. Co.	1,280
Mid-Kansas Oil Co.	200
Prairie Oil & Gas Co.	250
Sinclair Oil & Gas Co.	70
The Texas Co.	300
Miscellaneous	3,550
Young County—	
Gulf Production Co.	165
North American Ref. Co.	185
Sinclair Oil & Gas Co.	420
Okla. Pet. & Gas Co.	90
Panhandle Ref. Co.	450
The Texas Co.	160
Miscellaneous	3,470
Mitchell County	880
Reagan County	150
Jack County	30
Total	17,045
Total all fields	113,255
Total last week	116,030
Loss	3,775

GULF COAST

(Continued from Page 52)

in a revival of activity. In the older district, the Westlaco Oil Co.'s No. 2 is a 100-bbl. well at 1,725 feet.

The Cole Oil Co.'s No. 3, north of Bruni, is below 3,560 feet. Hodges and others have spudded in for a test 6 miles southeast of Del Rio. Morris and others No. 1 is standing at 2,000 feet with 1,500 feet of water in the hole. It will be drilled deeper.

Out in Crockett County, the Crockett Drilling Co.'s No. 1 Shannon is below 1,650 feet. The Esco Drilling Co.'s No. 1 Murphy is at 700 feet. The Texon Land Development Co.'s No. 2 is fishing at 2,770 feet and No. 3 drilling at 1,900 feet.

Milam County—Shallow Sand

The Texas Petroleum Development Co.'s No. 4 Neihaus is making 12 bbls. and Bynum and others No. 3 Neihaus 10 bbls. The Naoch Oil Co.'s No. 2 Baldridge is a 5-bbl. well at 1,000 feet. Lucky and Wilson's No. 1 Lewis is pumping 7 bbls. at 800 feet and No. 1 Moody, 8 bbls. Roundtree's No. 2 Fee is rated at 15 bbls. at 800 feet. Guthrie and others are drilling No. 2 Timmerman at 468 feet and W. C. Jennings is rigging No. 1 Branch. The Freddie Palmer Oil Co.'s No. 1 Sterlsky is rated at 20 bbls. initial at 1,012 feet. The Plunkett Oil Co.'s No. 1 Vongoten, 4 miles west of Rockdale, is showing oil at 900 feet. It is in a district that has been drilled over during the past 10 years, holes having been drilled to 800, 1,200, 1,400 and 2,250 feet.

More Wildcats

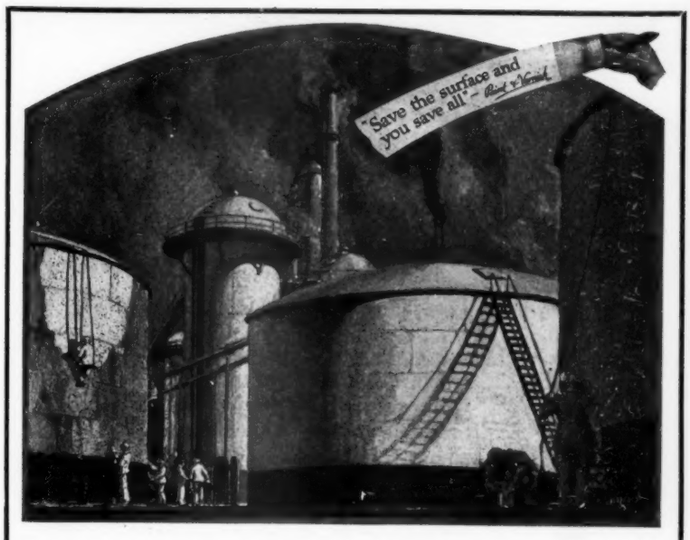
In Liberty County, the Quick Syndicate's No. 1 Peeler is drilling below 2,345 feet and the South Dayton Oil Co.'s No. 1 is deepening at 3,356 feet. The Vanderbilt Oil Co.'s No. 1 Selinder in Jackson County is drilling below 1,070 feet. G. M. Kuhn's No. 1 Knox in Montgomery County is shut down below 3,670 feet.

BRITISH STAY IN MEXICO

Questioned concerning reports of the withdrawal from Mexico of the El Aguila Oil Co., a British corporation, Sir Henri Deterding, head of the Royal Dutch-Shell group, stated: "I would be the last one the withdraw from Mexico." Sir Henri declined to express the impressions he gained of the American Petroleum situation during his visit to the Tampico region and a 24-hour visit to Mexico City.

WHAT IT MEANS

In reading The Oil and Gas Journal you will be taking the best means possible to keep yourself acquainted with the progressive developments and changes that are continually going on within the industry.



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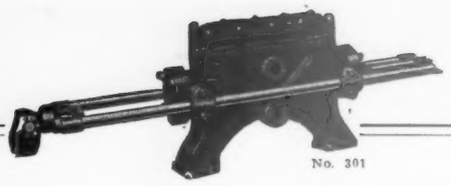


No. 301

GASO SMALL PUMPS

Correct in Design—Sturdy in Construction

No. 604

No. 601

While we have had very gratifying success in the manufacture, sale and operation of **large** pumps (the largest ever built in the Mid-Continent was recently perfected in our shops) we have not allowed this success to interfere with our attention to our smaller pumps. The same careful construction, high-grade material and thorough inspection that thousands of users of our smaller pumps have received is still a part of regular Gaso service. Following is a brief description of the pumps illustrated herewith.

No. 301—Gaso Piston Power Pump. Usable in high pressure work, yet suitable for lease and low pressure work.

No. 604—Walking Beam Pump—for taking gas from pumping well and putting vacuum on well.

No. 601—Walking Beam Pump for oil or water. Has practically no gasket surface.

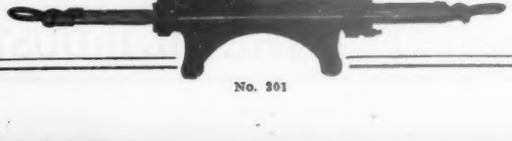
No. 201—Rodline Pump, designed for general service.

These are just a few of a comprehensive line. The services of skilled engineers are at your disposal in solving your problem. Shall they get in touch with you?

Gaso Pump & Burner Mfg. Co., Tulsa, Okla.

GASO PUMPS

for oil field uses



No. 201

IMPROVED ROTARY DRILL DEVELOPS WIDER USE

(Continued from Page 60)

of 5,000-foot wells within its limits. The deepest well in the State is the Standard Oil Co.'s No. 2 Brownrigg-Keller, which is down over 7,200 feet, using 4-inch drill pipe and a 7¾-inch bit. These deep wells reveal the presence of deeper sands, which appear to occupy larger areas than the corresponding upper sands.

Electricity is slowly supplanting steam on the grounds of better control and economy in running expense. The drilling motors are 75 to 100 horsepower and are supplied with alternating current at 440 volts pressure; there is an ammeter placed in the circuit, which indicates the current circulating, and 200 amperes have been sutained for over an hour when drilling at 3,000 feet, and over 250 amperes indicated when winding from 3,000 feet, with 20-pound drill pipe. From these figures it is evident that 75 horsepower is far too small, and that 150 horsepower would be none too much. The traveling speed, when hoisting the pipe, with a 75-horsepower motor is from 60 to 90 feet per minute, and the average time for a "round trip" in and out of the hole from 3,000 feet is two and a half to three hours, a good deal depending on whether the crew has been associated long enough to prevent their duties from overlapping.

Slush pumps are not altered much in design, but easier methods of renewing worn cylinder liners and valve seats are being devised.

Steel is replacing semi-steel and cast iron in the construction of the machinery, and is a great advantage, as the oxy-welder can deal with breakages in the field or build up worn parts so much more easily and expeditiously, without the necessity of dismantling any part of the machine.

An electric drive is being tried out which gives an automatic feed, limiting the weight imposed on the drill, and thereby the torque; this should do away with "twist-offs" altogether when perfected.

Derricks Higher

Derricks are being made slightly higher, the Chanslor-Canfield Midway Oil Co. making all its derricks 122 feet instead of 114 feet as hitherto; this gives greater head room for extra long "fourbles," and is an advantage. One firm has gone so far as to erect a 162-foot derrick, and pulls the drill pipe in "sixes" instead of "fourbles"; it is doubtful whether this is of much benefit, as the stands are so long that they have an inclination to bend in the centers.

Packing spiders are in universal use when "bringing in" a well, and their use has proved a great economy, as a well is often placed on production without the loss of a barrel of oil; besides, they make for greater safety.

Core bits are still the subject of experiment, and a type that will give an accurate core of both hard and soft material, without unduly compressing the latter, has yet to be evolved. The study of cores under the microscope is getting increased attention, with a view to correlating sands either by means of the fossil or mineral content.

The personnel appears to be improving in type, and there seems to be a genuine desire on the part of drillers and helpers to understand something about the technical and scientific aspects.

NAVY SEEKS 50 MILLION BARRELS OF FUEL OIL

(Continued from Page 80)

Marine are realized there will be a vast increase in the quantity of oil needed for this purpose.

About half of the railroads of the United States are using fuel oil in whole or in part to operate their locomotives. Such operation by fuel oil is only limited where such fuel comes in competition with coal in those parts of the country where a coal supply is convenient.

To uninformed people who think it is unnecessary to store fuel oil for future use by the Navy, the Shipping Board and the railroads, there should be a valuable lesson in the knowledge of the attitude assumed by many industries in respect to introducing fuel oil burners in their plants. It is very well known that it is practically impossible to make a five-year contract for fuel oil even with some provision to regulate the price in a way to save the consumer from extortion and the oil company from undue losses. The United States Bureau of Mines is frequently in receipt of letters from petroleum engineers which prove that many industrial plants are operated on coal or have installed oil burning apparatus made convertible to coal at a considerable additional expense, because of a lack of confidence in the continuity of the supply of fuel oil. There is no question whatever that if there were available in storage a considerable quantity of fuel oil so that industries might feel confident in the installation of fuel oil burners, there would be increasing demand for this product.

If the oil industry could be properly represented by a committee with all necessary facts and figures to show the economic advantages of large purchases of petroleum and its products by the Government when Congress reassembles in December a very profound impression would be made and many votes could be obtained for adequate appropriation to provide for the future fuel oil needs of the Government. Such a committee could be formed at an early date and if it should come to Washington fully prepared to present its case to Congress it would serve not only the oil industry and the Navy but the public as well.

KANSAS FIELDS

(Continued from Page 50)

cor. NE, Section 8-22-4, and the Watchorn Oil & Gas Co. had a rig on the ground for No. 36 Townsend, SW cor. SE, Section 5-22-4.

Greenwood County

There were very few signs of life in Greenwood County, Rogers & Brown's No. 2 Leedy, CNL SE NW, Section 31-22-10, was dry and abandoned at 2,760 feet. Tom Miller and others had a rig on the ground for No. 1 Estey, SE cor. SW, Section 7-26-9, and the Magnolia Petroleum Co. was drilling below 400 feet in its No. 1 Breese, NE cor. NW SE, Section 29-26-9.

Simmons & Pulaski were spudding their No. 1 Imthurn, SE cor. NW, Section 19-22-12, and R. G. Gillespie had a rig on the ground for No. 1 Clark, SW cor. NW, Section 27-22-13. It was reported last week as an abandoned location. He also had a rig for No. 15 Swanson, SW cor. NW SE, Section 20-23-13, and had made a location for No. 8 Jones, NE cor. SW, Section 21-23-13. His No. 6 Jones, CNL SW, same section, was drilling at 1,100 feet.

Danciger and others had a show of oil at 1,080 feet in their No. 1 Baker, NE cor SE SE, Section 17-26-13. C. W. Titus located No. 1 Prather, NW cor. Section 29-22-10, and Rogers and others were drilling No. 2 Barnard, CWL NW NE, Section 31-22-10, at 1,500 feet. The Empire Gas & Fuel Co. was drilling below 2,050 feet in No. 1 Harris, C NW NW NE, Section 19-22-11. The National Refining Co. shut down its No. 7 Wick, C NE SW NE, at 1,868 feet.

The White Eagle Oil & Refining Co. was spudding No. 1 Edwards, SW cor. NE, Section 13-23-10. Winters and others found a small show of oil at 2,260 to 70 feet in No. 1 Jackson, SW cor. Section 1-25-8, and were drilling ahead at 2,293 feet. The Empire Gas & Fuel Co.'s No. 1 Harris, NW cor. NE, Section 19-22-11, looked dry at 2,205 feet after topping the Mississippi lime at 2,163 feet. The Mission Oil Co. changed the number of its No. 32 Thrall, NE cor. Section 27-23-10, to No. 1-B Thrall. The well is being spudded in. The Orlando Petroleum Co. was drilling below 4,120 feet in No. 1 Breitkrantz, SW cor. NE SE, Section 4-24-10.

STEEL GAINING HEADWAY IN OIL FIELDS

(continued from Page 72)

This matter of replacement of band wheels of wood and driving belts has always been one that has added cost to every well both in new material and labor and shutdown time.

Chain Driven Sand Reel

The chain driven sand reel, while not a new device, has within the past two years been demonstrated to have merits that will make it a standard part of all modern drilling equipment in the not far distant future.

These reels are driven by chain of the same type as used to drive the calf wheels of the California pattern outfits, that passes over a sprocket on the band wheel shaft. This sprocket usually is bushed to permit the band wheel shaft to turn inside it freely and no power will be transmitted to the sand reel until the sprocket is driven by a clutch also on the band wheel shaft that can be thrown in and out at the option of the driller.

When this clutch is engaged the sprocket on the shaft of the sand reel is set in motion but here again no power is transmitted to the spools or drums on the sand reel shaft until a second clutch of the friction type is engaged.

When this clutch is thrown in the spools will be driven; when it is released the brake will be brought into action and the drums controlled and motion stopped, and the neutral position for lowering the bailer is between these two movements.

With this type reel all strain is taken off the driller in hoisting and he no longer has to stand with hands or one foot on the lever controlling the tail post and receive directly every jolt and jar that is transmitted through the reach rod to this lever from the band wheel.

The time for hoisting is materially reduced, thus speeding up the drilling operation and as the power is applied direct and there is no loss due to slipping between sand reel pulley and band wheel face there is a reduction in the actual power required to hoist the bailer.

These sand reels are made portable by being mounted upon structural steel skids and can be easily moved from rig to rig and bolted into place without necessity of being torn down and reassembled for each drilling location.

Electricity Being Used

The power for drilling wells is also going through a transition stage and the advantages to be obtained by the use of the electric motor is being recognized by many.

The large electric companies have recognized the problems that they would be called upon to solve if they hoped to offer to the oil fraternity a motor for this purpose and they have set about solving them in a very practical way by actually building the apparatus and trying it out under various drilling conditions until the practice of using electric motors for drilling wells is now conceded to be both economical and practical.

The large power companies were quick to grasp the advantages that this new development would bring to them and they are extending their power lines into the oil fields and it will not be long before drilling wells with electric equipment will be quite common practice in all established fields.

The particular problems that confronted the electrical engineer in applying the electric motor to drilling operations were, first, the necessary motion for drilling operation, and second, the necessary intermittently high torques required to handle casing, tools, etc.

In drilling, the driving apparatus should speed up when the load is released on each stroke so that the tools will drop freely. The tools should then be caught at their highest point on the rebound to prevent whipping the drilling cable.

Motors for Other Uses

These conditions have been taken care of in a very satisfactory manner with the motors developed for this purpose, together with their control units, pole changers, resistors and other appliances and the pulling characteristics of these motors are even better than the steam engine operating under steam conditions under normal conditions existing in oil field practice.

In addition to the drilling motors the electric companies have developed motors for pumping purposes and these are being rapidly adopted in fields where the power is now available, so it is not looking far forward to predict that the time will soon come when electricity will be utilized in the oil producing industry in the same proportion that it is now used in other industries.

For those who still find it necessary to use steam, the method of firing boilers has been constantly developed and modern burners for both gas and oil fuel are being offered on every hand, and economies in the fuel consumption effected thereby.

The oil field boiler is now built in accordance with the recognized A. S. M. E. boiler code, which has made them uniform in specifications and no longer subject to individual whims of the manufacturers.

Steam engines on the other hand do not show any marked changes in recent years, but their development came early in the life of the industry and the principal features added in recent years have been details of design and better material and workmanship.

The foregoing statements all deal with the material used above ground and around the rigs, but improvement in casing, couplings, tubing, working barrels and rods has also been pronounced and has kept stride with the rest of the developments in drilling equipment.

Tools for drilling and for use on the derrick floor show marked improvement and this is also true of the fishing tools which show the efforts of both the practical oil field men and the designing engineer and it is now possible to get a tool for practically every kind of a fishing job in every field.

Equipment Easily Assembled

From this review of conditions as shown by material and equipment displayed at the recent Petroleum Exposition it is not hard to predict that for drilling of oil and gas wells in the future the outfit will consist of equipment that will be built of steel and iron, that will be easily assembled at the location and used for drilling the well and later be taken down and moved in its entirety to a new location where it will be reassembled and used and this process continued again and again with only such replacements are are made necessary by the ordinary wear and tear to which all machinery must be subjected.

This has all been brought about by the cooperation of manufacturers of equipment and the producing companies, for the demand has first been created by the requirements set up by the producers for heavier and better material to permit them to drill holes deeper and quicker and has been met by the engineers for the manufacturers who have had the assistance in a practical way of the drillers and other men in the oil fields, and without this cooperation little would have been accomplished.

What is true about the standard tool drilling equipment is equally true concerning the rotary outfits and examination of such rotary equipment as was exhibited at the Petroleum Exposition show great steps forward in the past few years and many new innovations which are both unique in design and novel in their application.

Another outstanding feature in drilling equipment is adaptation of the diamond drilling equipment to oil field exploration.

The Diamond Drill

The diamond drill is by no means new but to use it under oil field conditions has required considerable study on the part of the engineers and the satisfaction which this equipment is now giving speaks well for their ability to solve the many problems that have confronted them.

Patented Oct. 21, 1913

Scientifically Painted

To Prevent Scaling

A high grade glossy black paint, especially prepared to resist the action of salt water and the elements, is used in painting MALONEY Tanks.

Method of application is thoroughly scientific, an air system being used and the sheets sprayed, with a pressure of 80 pounds. This divides the paint into microscopic particles and it is forced into every minute pore of the metal, sealing the surface to the action of any corrosive agent.

Ordinary painting by hand is not scientific, as it deposits only a thin film on the metal surface, which will soon scale off.

The paint-impregnated pores of MALONEY Tanks can be protected for an indefinite period by repainting at regular intervals after the tank is in use.

POINTS OF EXCELLENCE: MALONEY Tanks fit together precisely without calking, due to their patented crimped seams. They are made of rust-resisting Keystone Copper Steel, have packed-joint manholes, cleaning-out plates flush with bottoms and vacuum pressure valves. Ask for Catalog C giving full information and specifications.

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Today when they visit the modern plant that they helped build, they are astonished, when they inspect our products they are delighted.

Won't you buy some DREADNAUGHT Equipment and join with us and our old friends in enjoying the services it will render.

Ask Your Supply Dealer

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Beaumont, Texas, U. S. A.

OKLAHOMA FIELDS

(Continued from Page 38)

Endicott, NW cor. SW SW, Section 35-25-1w, which made 120 bbls. after a 7-quart shot in sand at 1,845-53 feet; No. 3-A Endicott, SE cor. SW, same section, was increased from 18 bbls. to 86 bbls. by a 15-quart shot in sand at 2,416-74 feet; No. 5-A Endicott, CSL SW SW, same section, was making 210 bbls. as the result of a 20-quart shot in sand at 2,450-90 feet; No. 6-A Endicott, CNL NE SW SW, same section, was given 10 quarts in sand at 2,417-37 feet and another 10 quarts from 2,451-71 feet, making 214 bbls.; No. 8-A Endicott, NW cor. SE SW, same section, was shot with 20 quarts from 2,432-72 feet and made 208 bbls.

Burbank Operations

In the Burbank extension, the Carter Oil Co. was rigging up No. 1 Pappan, SW cor. NW, Section 3-27-5. The Texas Co. was building a rig and moving in tools for its offset, No. 2 Munroe, NW cor. SW, same section. The Roxana Petroleum Corp. was also moving in tools for an offset, No. 2 Pappan, SE cor. NE, Section 4-27-5. The Phillips Petroleum Co. drilled No. 2 Taylor, CNL NE NW NE, Section 9-27-5, from 2,950 to 2,954 feet, but did not increase its original output of 10 bbls. an hour from sand at 2,922-50 feet. Deeper drilling in the same company's No. 4 Taylor, C NE NE NE, same section, was also a disappointment. It had been making 375 bbls. from sand at 2,903-33 feet, and at 4 feet lower was not doing any better. No. 3, SW cor. NE, and No. 9, CWL SW NW NE, on the same lease, were being rigged up, and No. 7, CEL SE NE NW, was drilling at 150 feet.

Several other wells were drilling at shallow depths in Section 9-27-5: The Prairie Oil & Gas Co.'s No. 2 Hobson, SE cor. NW, at 160 feet; the same company's No. 1 Hobson, NE cor. SE NW, below 360 feet; the Sinclair Oil & Gas Co.'s No. 2 Woods, NE cor. SW, below 100 feet; the Mid-Kansas Oil & Gas Co.'s No. 2 Rhodes, NW cor. SE, below 280 feet.

The Phillips Petroleum Co. and Skelly Oil Co. were rigging up No. 4-A, SE cor. Section 23-27-5. The Mid-Kansas Oil & Gas Co. was building a rig for its No. 13, CSL SE SW SE, Section 35-27-5.

An old well belonging to the Cosden Oil & Gas Co., No. 8, CWL NW SW NE, Section 17-26-6, was helped by an 80-quart shot in sand from 2,912 to 2,956 feet and made 100 bbls. It had been producing 25 bbls. naturally. The Producers & Refiners Corp. made a location for No. 13, C NW SE NE, Section 16-26-6, and had a rig on the ground. The Cosden Oil & Gas Co.'s No. 8, CWL NW SW NW, Section 8-26-6, was shut down at 2,775 feet. Rigs were in place for the Lorraine Oil Co.'s No. 16, C NE SW SE, Section 6-26-6, for Moore's No. 13, CSL SE SW SW, Section 1-26-5, and for the Tidal-Osage Oil Co.'s No. 15, C NW SE SW, Section 6-26-6. The latter company's No. 16, CNL NE NW SW, same section, was rigged up and shut down.

In the Osage, the American Pipe Line Co. was drilling at 450 feet in its No. 89, C NE SW, Section 30-29-10. John R. Hadley's No. 3, CSL SE NW, Section 27-29-11, was making 60 bbls. after a 30-quart shot in the Peru sand at 914-957 feet. The test Log Oil Co. had trouble with the hole at 350 feet in its No. 3, CSL SE SE NE, Section 16-24-8. The Mutual Oil Co. had a machine up for No. 21-B, SE cor. NW NE, Section 32-24-8, and abandoned as dry at 692 feet its No. 9, CWL SW, Section 33-24-8.

Seaman and others' No. 3, CSL SE NE, Section 3-25-8, was a rig. John R. Hadley had a machine for his No. 4, CEL SE NW, Section 27-29-11, and E. J. Black also had a machine in place for No. 3-A, CEL SE SW, Section 34-27-12.

The Owen Osage Oil Co. brought in three gassers, No. 257, NE cor. NW NE, Section 19-24-11, making 1,500,000 feet from the Bartlesville sand at 1,635-40 feet; No. 260, CSL NE NE NE, good for 4,000,000 feet of gas on top of the same sand at 1,602 feet, and No. 22[illegible] SE cor. NW, Section 9-22-11, a 5,000,000-foot producer from the Burgess sand just scratched at 1,850 feet. The same company had a machine for No. 3, CWL NW NW NE, Section 19-24-11.

There were two small wells completed, one for 25 bbls. on the pump, after a shot of 170 quarts, by Oliphant and others. It was their No. 3, SE cor. NW, Section 32-24-[illegible] and the sand was shot from 2,135-85 feet. The Plymouth Petroleum Co.'s No. 1, CNL NE NE, Section 33-22-9, was good for 5 bbls. from the Bartlesville sand at 2,103-99 feet. The Mid-Kansas Oil & Gas Co. had a machine for No. 1, SW cor. NE, Section 8-23-10. Munn Bros. were spudding No. 5, CWL NW NE, Section 28-20-12, and the Peer Oil Co.'s No. 3, NE cor. SE NW, same section, was drilling at 1,520 feet.

Cleaning Out and Shooting

In the Tonkawa area, there were 2[illegible] wells shut down at various stages in Section 2-24-1w, Noble County. On the Blubaugh lease, the Comar Oil Co.'s No. 7-B, SE cor. SW, same section, was flowing 174 bbls. naturally from sand at 1,889-95 feet; No. 8-A, NE cor. SW, an old well, was cleaning out without production in sand at 2,097-99 feet; No. 10, CSL SE SW, was drilling by the liner at 2,230 feet; No. 15, CEL NE SW, was drilling at 785 feet; No. 21, C SW, was underreaming the 5-inch at 2,529 feet; No. 22, CNL SE SW, was being rigged up; No. 1-A, NW cor. SE, had 1,500 feet of oil in the hole from sand at 2,100-33 feet and was being cleaned out; No. 2-A, SW cor. SE, was making 42[illegible] bbls. after a 20-quart shot in sand at 2,569-86 feet; No. 4, CNL NW SE, was fishing for the liner at 2,492 feet; No. 5, C NW SE, was fishing for 6-inch casing at 2,320 feet; No. 9, C SW SE, had a rig up and a big Diamond Sullivan core drill was being moved in.

On the Ellsworth lease in the same section, the Comar Oil Co.'s No. 12, CSL SW NE, had the 6-inch casing set at 2,281 feet and was being cleaned out; No. 13, C SW NE, was drilling at 726 feet.

The same company's No. 2 Carmichael, NW cor. NE, Section 3-24-1w, an old well, was being cleaned out at 2,224 feet; No. 3-B, same lease, NW cor. SW NE, was plugged back from 2,273 to 2,260 feet; No. 6-A, CNL NE NE, an old well, was making 102 bbls. naturally from sand at 2,190-2,224 feet; No. 9-A, CNL NW NE, was flowing 235 bbls. from sand at 2,220-27 feet; No. 9-B, same location, was good for 165 bbls. naturally from sand found at 1,875-86 feet; No. 24, C SW NE, was being cleaned out in preparation for a shot in sand from 2,542-65 feet; No. 24-A, same location, was also being prepared for a shot in sand at 2,060-85 feet.

The Comar Oil Co. was pulling the liner in its No. 7-A Ruzek, CNL NE SE, Section 3-24-1w, at a depth of 2,172 feet; No. 13-A Ruzek, C SE SE, same section, was cementing the 6-inch at 2,030 feet. There were 5 wells shut down in Section 3-24-1w.

The Prairie Oil & Gas Co. was fishing for 15-inch casing at 800 feet in its No. 5-B Novotny, SE cor. NE SE, Section 10-24-1w. The same company was pulling the big pipe in its No. 7-A Novotny, NE cor. NW SE, same section, after topping the sand at 2,592 feet, and was drilling at 1,082 feet in No. 7-B Novotny, CSL SW NE SE, same section.

The White Eagle Oil & Refining Co.'s No. 10 Hubka, CNL NW SE SE, Section 10-24-1w, was a 230-bbl. producer from sand at 1,956-71 feet. The Comar Oil Co.'s No. 1-A Oliver, NW cor. NE, Section 11-24-1w, was drilling at 1,4[illegible] feet.

On the Rence lease of the Healdton Oil & Gas Co., in Section 11-24-1w, No. 5-B, NE cor. NW, was drilling at 1,284 feet; No. 8-A, CNL NE NW, was being cleaned out at 2,570 feet; No. 8-B, same location, was making 538 bbls. naturally from sand at 1,920-36 feet; No. 11-A, CWL SW NW, was shut down with the 8-inch cemented at 2,563 feet; No. 12, C NW NW, was fishing for the liner at 2,580 feet; No. 12-A, same location, was

flowing 300 bbls. from sand at 1,923-33 feet.

On the Kay County Side

In the Tonkawa district of Kay County, the Besdor Oil Co. was running the 8-inch casing in No. 1 Chambers, SW cor. SE, Section 9-25-2w, and was down 2,091 feet. The Brown Oil Co.'s No. 1 Simmons, NE cor. SE, Section 27-25-2w, was shut down at 2,112 feet. Embry & Leewright also shut down their No. 1 Davis, NE cor. SE SE, Section 36-25-2w, at 1,096 feet. The Blackwell Oil & Gas Co. was cleaning out No. 4-A Corrigan, SE cor. NE, Section 34-25-1w, an old well, and had the 6-inch casing set at 1,760 feet.

The Comar Oil Co.'s No. 4 Clements, CEL SE NW, Section 34-25-1w, was being swabbed and cleaned out after a shot with no results. The sand was shot from 1,905 to 1,985 feet. The tools were stuck in the same company's No. 9-A Clements, CWL SW NW, same section, and No. 12 Clements was drilling at 2,534 feet in sand topped at 2,503 feet without getting any production. No. 18-A Clements, C NE NW, same section, was making 134 bbls. from sand at 1,960-2,035 feet. No. 21-A on the same lease, C NW NW, was cleaning out at a depth of 2,019 feet.

The Pennok Oil Co. had a 235-bbl. natural producer in its No. 6-B Endicott, CSL SW SE, Section 34-25-1w. The Comar Oil Co. was cleaning out No. 3-C Endicott, preparatory for a shot, and was also cleaning its No. 2 Endicott, NW cor. SE, same section, after a 20-quart shot in sand from 1,955 to 1,977 feet without results. This was an old well. Comar's No. 9 Endicott, CSL NE NW SE, same section, was making 135 bbls. naturally from sand at 2,490-2,540 feet.

McCaskey & Wentz were drilling an old well, No. 20 McKee, C NE SW, Section 34-25-1w, at 2,100 feet. The same company had run a steel nipple in No. 22 McKee, CNL NE SW, same section, at 2,357 feet, and had shut down No. 42 McKee, C NW SW, at 2,533 feet. They were fishing for tools at 2,564 feet in No. 43 McKee, C SW SW, and were straightreaming No. 44 McKee, C SW SW, same section, at 2,077 feet.

Three Dry Tests in Creek County

Three dry holes were recorded in Creek County. The Magnolia Petroleum Co.'s No. 1 Jones, SE cor. SW, Section 36-18-7, was abandoned at 3,953 feet, and J. F. Quinn's No. 1 Harjo, NE cor. NW, Section 35-18-8, at 3,401 feet. Burton and others' No. 1-A Morgan, NW cor. Section 3-19-9, was a failure at 2,784 feet. The Texolean Oil Co. had a rig in place for No. 4-A Washington, SW cor. Section 32-17-8, and the Independent Oil Co. was drilling its No. 1 Tiger, NE cor. SW, Section 36-15-7, at 530 feet. The Hiram Oil Co.'s No. 6 Fulsom, SW cor. NE NE, Section 8-15-8, was swabbing 80 bbls. following a 30-quart shot in sand at 3,732-96 feet.

The Wolfe Oil Co. was spudding No. 1 Montgall, SW cor. Section 27-18-8, and the Magnolia Petroleum Co. had a rig for No. 30 Musselman, CWL NW NW NE, Section 8-18-7. The same company's No. 29 Musselman, CEL NE NW NE, same section, was good for 700,000 feet of gas from sand at 675-80 feet.

The Shaffer Oil & Refining Co.'s No. 1 Wacoche, NW cor. NE, Section 17-17-11, was making 15 bbls. naturally from sand at 2,577-88 feet. Allen and others were rigging up a machine for No. 1-A Pickett, CSL NW SE SW, Section 33-17-11. R. D. Donnelly and others had a rig for No. 2 Bear SW cor. SE NW, Section 16-14-10. The Independent Oil & Gas Co. was drilling below 1,475 feet in No. 1 Barnett, SE cor. SW NE, Section 31-14-10. The Sapulpa Refining Co.'s No. 2 Sewell, SE cor. NW NE, Section 34-15-10, was drilling below 2,350 feet.

The Wilcox Oil & Gas Co. had also reached 2,980 feet in its No. 4 Ansleal, NE cor. SE, Section 32-15-10. The Mt. Fork Oil Co. was fishing at 2,660 feet in its No. 1 Harry, SE cor. SW SW, Section 28-15-10, and the Carter Oil Co. and Davis were drilling No. 1 McIntosh, SE cor. NW NW, Section 29-15-10, at 1,960 feet.

In Okfuskee County, Burton and others' No. 3 Thompson, C NE NE, Section 1-12-11, flowed 720 bbls. naturally from the pay sand at 2,538-55 feet. The Henry Oil Co.'s No. 1 Binckley, SE cor. SW SW, Section 12-12-11, was drilling at 2,740 feet. It was an old well. Waite Phillips was bailing the hole with 5-inch casing set at 2,734 feet in No. 6 Barnett, SW cor. NW NE, Section 13-11-11, also an old well.

An old well, Moffett and others' No. 2 Summers, NW cor. Section 8-11-11, was being deepened. The Wooster Oil Co.'s No. 2 Fish, CWL SW SE, Section 12-11-11, was drilling below 2,832 feet. Deaner & Jamison had a rig up for No. 6 Holmes, CNL NW NE NW, Section 22-11-11. Calvin and others made a location for No. 1 Barnett, CEL NW NE, Section 34-11-11.

Small Wells Near Tulsa

Tulsa County showed a little activity with a couple of small producers. Pennington and others shot No. 2 Hooks, C NE NE, Section 33-19-14, with 40 quarts in sand at 1,346-67 feet and it was good for 10 bbls. of oil. E. R. Minshall's No. 3 fee, CNL NE NE NE, Section 27-19-11, made 10 bbls. naturally from sand at 2,108-48 feet.

The Sand Springs Home abandoned No. 1 Martha, C SE NE, Section 12-19-11, as a failure at 2,228 feet. Flesher and others' No. 2-A Vanest, NW cor. NE SE, Section 34-19-13, was shut down at 1,775 feet. Webster and others were drilling No. 3 Grant, CWL NE NW, Section 25-19-14, at 1,100 feet, and Elliott and Sons were also drilling No. 2 Bruner, NW cor. SW, Section 9-18-13, at 900 feet.

The Prairie Oil & Gas Co.'s No. 2 Gilcrease, SW cor. NW SE, Section 34-17-12, was a rig. The Fletcher Petroleum Co. was rigging up tools for No. 3-A Tiger, CWL SW NE, Section 12-18-12.

In Okmulgee County, the Preston Oil Co. was rigging up No. 1 Cumseh, CWL SE NE, Section 26-13-13. The Ohiokla Oil Co.'s No. 1-A Rentie, SE cor. NW NE, Section 19-14-15, was abandoned as a failure at 1,918 feet. The Roxoline Oil Co.'s No. 3 Campbell, SW cor. NE SE, Section 24-13 12, was making 15 bbls. naturally from sand at 1,917-40 feet.

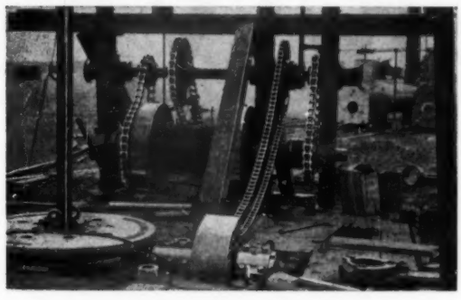
The Pulaski Oil Co. treated No. 1 Wills, SW cor. SE SW, Section 22-16-12, to 5 and 10-quart shots in sand at 2,535-40 feet and it was good for 75 bbls. The Sinclair Oil & Gas Co. was moving in tools for No. 2 Gamble, CEL SE SE, Section 23-16-12. The Oklahoma Natural Gas Co.'s No. 6 Tiger, NW cor. SW SW, Section 24-16-12, was shut down to repair the rig at 2,185 feet, and the Adams Oil & Gas Co. abandoned the rig on No. 1 Grayson, SW cor NE, Section 30-16 12.

The Independent Oil & Gas Co. was spudding No. 4 Coleman, NW cor. NE NW, Section 27-16-12, and the Oklahoma Natural Gas Co. had a rig up for No. 7 Tiger, CEL SW SW SW, Section 24-16-12. The Margay Oil Co.'s No. 1 Coleman, NW cor. NE, Section 24-16-12, was a duster at 2,882 feet. The Thurman Oil Co. was building a rig for No. 1 Perryman, NW cor. SE, Section 1-16-14, and Schuler & Fisher were drilling at 1,450 feet in their No. 6 Tiger, CSL NE NW NW, Section 30-16-13.

Muskogee and Wagoner

In Muskogee County, Vogler and Leightner shut down their No. 2 Beams, CNL SE SW, Section 19-14-16, after encountering water at 595-605 feet and at 970-83 feet. The Roxoline Oil Co. abandoned No. 4 Tipton, CSL SW SE, Section 24-14-16, at 2,458 feet. Biggs and Evans and Ozark Development also had a dry hole in No. 1 McNac, NE cor. SW SW, Section 14-13-15.

In Wagoner County, the Twin State Oil Co. abandoned No. 1 Ridinger, SE cor. SW, Section 15-19-16, as dry at 3,963 feet. Wilder and others also abandoned No. 1 Bird, SW cor. NE NE, Section 27-18-15, as dry at 1,727 feet. Two other failures were the Valley Oil Co.'s No. 1 Bruner, SE cor. NW SE, Section 36-17-15, at 1,940 feet, and Sewell and others' No. 1-A Bruner, CSL SW SE, Section 19-17-16, at 1,080 feet.



THIS RIG drilled the Patsy Kirk No. 2 on the Palmer Farm in the Graham Field and made what the Daily Ardmoreite correctly termed a "record" by sinking 2660 feet of hole in 19 days.

The rig is owned by Messrs. Kaufman and Markham, Ardmore, Oklahoma; has made a total of seven deep wells, and is still going strong.

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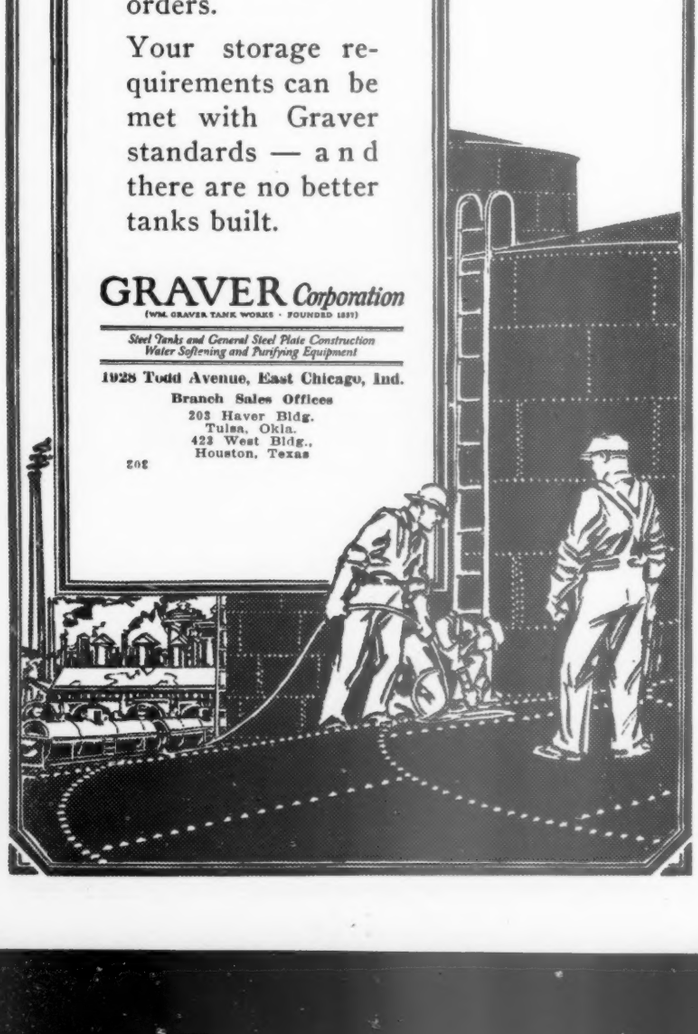

CENTRAL WEST

(Continued from Page 50)

Section 2, and Weideman & Glass' No. 1 Tully Bernes.

In Blooming Grove Township, Richland County, Bert Hancock and others are drilling No. 1 A. Firestone, Section 30. O. J. Davidson is drilling No. 1 A. Morton, and Barnhart, Geiger & Berry are drilling No. 1 J. Myers. In Troy Township, the Lexington Oil & Gas Co. lost three strings of tools in its test below 2,000 feet on the Thomas Dunshee, Section 26, and has abandoned the hole and left the tools in the hole. In Monroe Township, same county, the Ohio Fuel Gas Co. made a location for a test on the M. H. Schrack 155 acres, Section 28.

Across the line in Ripley Township, Huron County, nine new gas completions are reported, and three wells drilling. Coyle and Matthews' Nos. 1, 2, 3 and 4 Reber farm, estimated at 500,000, 1,000,000, 340 000 and 400,000 feet respectively. Hulse & Koontz' Nos. 1 2 and 3 S. Boble farm, estimated at 500 000 feet each, while No. 4 shows for 1,000,000 feet. George S. Lacknett's No. 1 Gilger farm, estimated at 500 000 feet. No. 2 same farm, is drilling. O. J. Davidson is drilling No. 1 Emma Hale farm, and unknown parties are drilling No. 1 Hays Noble farm.

In Brown Township, Knox County, the East Ohio Gas Co. drilled a nice gas well in No. 1 S. D. Reed farm, Section 15. In Clay Township, same county, the Grit Oil and Gas Co. drilled a light gas well in No. 1 S. B. Dodd, Section 17, and the Heisey Gas Co. got a very light gas well at No. 4 Ben Ross 46 acres, Section 18.

The sensational strike of Knox County, is that of the American Oil Co., in a test on the Fretch Veatch 154 acres, Section 1, Jackson Township, and estimated at 100 bbls. In Butler Township, same county, the Ohio Fuel Gas Co. has a fishing job at No. 1 W. P. Griffin 243 acres, Section 22, at a depth of 3,100 feet. This company has started the drill at its second test on the Roscoe Helmick farm, Section 30, Walnut Township, Fairfield County.

In Hanover Township, Ashland County, the Logan Gas Co. drilled an excellent gas well in a test on the Fred Fechter, Section 27, also a good gas well in a test on the Mary A. Sellers, Section 17, and is drilling No. 2 Rose Derr, Section 17. The East Ohio Gas Co. drilled an average gas well in No. 1 H. Ackerman, Section 23 and is drilling No. 1 Emanuel Kirk, Section 26. Ohio Fuel Gas Co., drilled a dry hole at No. 1 William Fisher, Section 2, and started drilling at No. 1 Andy Morris, Section 22, and No. 1 J. F. Jones, Section 18. This company's No. 1 William Black, Section 16, is a very good gas well. The Logan Gas Co. made a location for a wildcat well on the John F. Henry 182 acres, Section 27, Ruggles Township, same county. In Mohican Township, of the county, the same company got a dry hole in a test on the C. A. Pearce, Section 26, and the Ohio Fuel Gas Co. is drilling a test on the T. R. Glenn 76 acres, same township.

Ashland County

In Orange Township, Ashland County, the Logan Gas Co., drilled a duster in a test on the Eliza Berket, Section 6, but offset this by the completion of a nice gas well at No. 3 Alex Phillips. Section 6. In Jackson Township, same county, the Ohio Fuel Gas Co. drilled a dry hole in a test on the Harry L. Weiler, Section 10, and in Miflin Township, Geiger and Barnhart drilled a duster in a test on the Hoover heirs farm, and George Van Tilburg is drilling No. 2 Koontz farm, same township.

In Liverpool Township, Medina County, the Logan Gas Co. drilled a light gas well at a second test on the Andrew Nilges, Section 19. This company is drilling No. 2 W. M. Nilges, 40 acres, Section 19, and the Ohio Fuel Gas Co. made a location for a second test on the Katherine Hemminger 79 acres, Section 22. In Chatham Township, same county, the East Ohio Gas Co. got a nice gas well at No. 4 Chesley G. Chapman, Lot 7, and made a location for No. 1 Robert Ritchie farm, Lot 15. In Medina Township, the Ohio Fuel Gas Co. got only an average gas well at No. 1, William Schaber, Section 5. Same company is drilling a test on the Henry Harris, 132 acres, Section 19, Hickley Township.

In York Township, Medina County, the Logan Gas Co. drilled a duster in a test on the H. G. Wolf, Section 11, and started the drill at No. 2 Allen K. Weisz, Section 13. The Ohio Fuel Gas Co. drilled a duster in No. 3 J. A. Wolfe, Section 12, is drilling a second test on the Mary C. Pierce 44 acres, Section 5, and made a location for a test on the George Hinman 38 acres, Section 11. The Central Ohio Gas Co. got a light gas well at No. 1 George Starr, Section 13, and a dry hole at No. 2 Charles Wolfe, Section 4, and drilling No. 1 Charles Wolfe 103 acres, Section 13.

In Grafton Township, Lorain County, the Ohio Fuel Gas Co. hit a nice gas well at a test on the E. and E. Rice, Lot 54, and is drilling a test on the George Schafer 122 acres, Lot 67. Same company drilled a dry hole in a test on the Alvert Bring, Section 10, Lagrange Township, same county. In Columbia Township, same county, the same company is drilling tests on the Richard Putt farm, Section 92 and No. 1 Clara J. Elder, Section 24.

Wayne County

In Wooster Township, Wayne County, the Ohio Oil Co. is cleaning out No. 1 William Orr, Section 21, and drilling No. 4 H. C. Jameson 84 acres, Section 8, East Union Township. The Klise-Eckstein-McCann Co. is drilling a test on the William Redett 30 acres, Section 23, Franklin Township. In Wayne Township, the Logan Gas Co. made a location for a test on the Fike-Edmonds, Section 4, and the Ohio Fuel Gas Co. a location for a test on the Charles Pressler 84 acres, Section 5. This company is drilling No. 1 A. Bucher, Section 29, and No. 2 Mary S. Buckholtz, Section 19.

In Cannan Township, Wayne County, one of the most active townships for development work in the Central Ohio area at this time, the Ohio Fuel Gas Co. drilled a dry hole on a test on the Fred H. McAfee, Section 19, and one in No. 2 on the F. V. Rennecker, Section 22. Its No. 1 on the F. J. Lehman, Section 33, is a fine gas well. This company is drilling a test on the R. H. Kemerer 122 acres, Section 14 and made locations for No. 1 S. M. White 116 acres, Section 9; No. 1 J. F. Bowers 40 acres, Section 21 and No. 1 Auretta Barker one acre, Section 12. Klise-Eckstein-McCann Co.'s No. 1 J. H. Blocher, Section 35, is credited with a 25-bbl. production, while its No. 1 L. H. Grunder, Section 26, was dry. Central Ohio Gas Co. drilled in No. 1 R. N. Nosker, Section 11, for a fair gas well, and is drilling No. 1 Mary Lee 14 acres, in the village of Creston, in Section 1. The Creston Oil Co. drilled an excellent gas well in No. 1 D. Wiles, Section 21. Mayes and others also drilled a nice gas well in No. 1 Joseph Powers 20 acres, Section 12, and is drilling No. 2 J. R. Stuckey 100 acres, same section. Bowers and others are drilling No. 1 A. J. Lance 47 acres, Section 2; the Reese Gas Co. No. 4 S. T. Reese 80 acres, Section 33, and G. C. Merickle and others their No. 1 Frank Ensminger 6 acres, Section 1.

In Richland Township, Vinton County, the Ohio Fuel Gas Co.'s test on the H. M. Whitcraft, Section 32, is a dry hole.

In Benton Township, Hocking County, the Logan Gas Co. drilled in three good gas wells in No. 1 J. and B. Cain, Section 22; No. 1 C. H. Rathbone, Section 25, and No. 3 J. L. Mauk, Section 13. This company is drilling No. 4 J. L. Mauk 120 acres, and made a location for No. 2 3 A. L. Unger 140 acres, and for No. 2 George Amerine 175 acres, Section 22. The Ohio Fuel Gas Co. also completed a good gas well in No. 1 C. W. Davis,

Section 28, and made a location for No. 1 Eliza Davis 82 acres, Section 27.

In Ripley Township, Holmes County, the Ohio Fuel Gas Co.'s No. 1 J. B. Shoup, Section 36, is reported showing for an 8-bbl. well, while the East Ohio Gas Co. drilled a dry hole in a test on the Albert Weimer, Section 17. In Monroe Township, the Central Ohio Gas Co. has made four new locations for tests on the Elva R. Martin 37 acres, Section 4; No. 1 Jess Powers 60 acres, Section 31; No. 1 Sampson R. Snyder 51 acres, Section 32, and No. 1 Ida A. Bower 40 acres, Section 16. The East Ohio Gas Co. is drilling No. 1 J. A. Baker 100 acres, Section 18.

In Hardy Township, Holmes County, the Central Ohio Gas Co. drilled a light gas well at a test on the Joseph Gindelsperger farm, Section 31, and made a location for No. 1 on the John Gindelsperger 75 acres, same section. Klise-Eckstein-McCann Co. is drilling No. 1 John R. Findley 130 acres, Section 7 and No. 1 Jess P. Close 162 acres, Section 4. In Washington Township, the Logan Gas Co. drilled dry holes in No. 1 Margaret Lozier, Section 3, and No. 1 H. W. Heffelfinger, Section 6, and is drilling No. 1 H. G. Huffman, Section 33.

In Prairie Township, Holmes County, the Ohio Oil Co.'s No. 1 Sam Lefever, Section 32, is estimated at 10 bbls. The Ohio Fuel Gas Co. is drilling Nos. 2 and 3 Cornelia Lecky, Section 30, and the East Ohio Gas Co. made a location for No. 1 L. A. Sowash 50 acres, Section 17.

In Washington Township, Jackson County, the Ohio Fuel Gas Co. drilled a fair gas well at No. 4 J. W. Herberger, Section 12, and is drilling No. 1 J. W. Marsh, Section 34 and No. 1 Mary E. Tripp, Section 13. In Coal Township, same county, the same company drilled an average gas well at a test on the S. S. Stephenson farm, Section 3, and the Ohio Fuel Supply Co. got an excellent gas well at a test on the W. E. Dixon, Section 34, the gas coming from the second Cow Run sand. In Franklin Township, the same company drilled another gas well above the average in No. 2 William Steele, Section 13, and made locations for No. 1 Claressa Scurlock 55 acres, and No. 1 Minnie Stephenson 160 acres, Section 12.

In Carthage Township, Athens County, the Bradford Oil & Gas Co. got two good gas wells at Nos. 1 and 2 D. Dunlavey, Section 5 and the Ohio Fuel Supply Co., a good gas well at No. 1 H. W. Barnhart, Section 11, and is drilling No. 2 same farm. Kempf & Bailey are drilling No. 5 C. Basin 100 acres, Section 5. In Rome Township, Rose & Blosser made a location for No. 2 H. McGraw 148 acres, Section 23, and the Roel Run Oil and Gas Co. is drilling No. 1 Fred Manikin 4 acres, Section 7.

In Washington Township, Lawrence County, the Ohio Fuel Supply Co. drilled a dry hole at a test on the Levi D. York, Section 10.

Indiana Field

The Indiana Field for the week reports five completed wells, three in the old Trenton Rock Field and two in the Princeton Field in the southwestern part of the State. There were 27 old wells pulled out in the State.

In Bear Creek Township, Jay County, Smethers and others' No. 4 on the W. McMichaels, Section 18, pumped 6 bbls. In Jackson Township, the Fostoria Oil Co. abandoned Nos. 7, 12, 16 and 18 George A. Richison, Section 30, and in Penn Township, Willson & Hartley did the same with Nos. 1 and 2 Elias Thomas, Section 36. In the same township, C. F. Willson and others are drilling No. 4 Mary Grissell, Section 28, and close to Pennville.

In Nottingham Township, Wells County, the Ohio Oil Co., Indiana division, abandoned Nos. 14, 17, 20 and 21, George Updegraft, Section 25; Nos. 27, 34, 35, 36 and 37 D. Bryan heirs, Section 19, and No. 5 R. A. Waldron, Section 27. George D. Roberts, did the same with No. 3 Mary Blocher, and No. 5 R. Y. Taylor, both in Section 20.

In Blue Creek Township, Adams County, the Rockford Oil Co. has a 2-bbl. pumper at a second test on the C. J. Jones, Section 30. In Wabash Township, the Aspy Oil and Gas Co.'s No. 1 William Aspy, Section 26, is showing around 2 bbls. In Hartford Township, the Ohio Oil Co., Indiana division, abandoned Nos. 1, 2, 3, 4 and 6, A. Ensley, Section 27, and O. C. Taylor did the same with No. 1 Pontius, Section 25.

In Pleasants Township, Grant County, Nickelson and others' No. 4 Merlwain, Section 15, is reported a 15-bbl. pumper. In Jefferson Township, Broyles & Beckman, abandoned Nos. 1 and 3 Stout & Hower farm, Section 22.

In Jackson Township, Randolph County, the Ohio Oil Co., Indiana division, abandoned No. 2 C. Hoover, Section 9.

In Madison Township, Pike County, in the Princeton Field, H. E. Merrifield, Trustee, drilled a dry hole at a test on the C. Dougan, Section 32, at 1,247 feet.

Illinois Field

Some excitement prevails near Jacksonville, in Morgan County, over the finding of a good gas volume at a shallow depth from 325 to 375 feet

As far as reported four gas wells have been drilled by C. P. Irwin and others covering three sections and all have proved producers, so that the field already covers a distance worth looking after. Nos. 1 and 2 on the O. O. Harris farm, Section 3-15-9, of Morgan County are both estimated as large producers of gas and reports are that they show from 5,000,000 to 10,000,000 feet at the shallow depth. A light gas well was drilled in Section 10-15-9, while the latest completion in Section 2-15-9, is estimated around 3,000,000 feet.

In Oblong Township, Crawford County, the Liberty Oil and Gas Co. drilled in a light gas well at No. 19 on the L. F. Houghton, Section 33. In Montgomery Township, same county, Phipps & Blosser are drilling a test on the L. B. Smith, Section 28.

In Martinsville Township, Clark County, the Trenton Rock Oil Co. is drilling No. 2 William Caroer, Section 30, and McArthur and others are working at a test on the Lewis Webb, Section 19, while in Johnson Township, the Mumford Oil Co. is drilling a test on the Lewis Hedges, Section 12.

In Hunt City Township, Jasper County, Grant Jessup drilled a dry hole in a test on the northeast corner of the C. H. Madden, Section 12.

Eastern Kentucky

One of the most important wells in any section of Kentucky, is now under completion by the Swiss Oil Corp., near the small hamlet of Drift, on Beaver Creek, south from Prestonburg, in Floyd County. This well has been drilled in to a depth of 2,800 feet with 15 feet of pay sand in the corniferous lime. Last Thursday the well flowed 50 bbls. in a 250-bbl. tank and then shut in and opened again on Saturday and put 100 bbls. in the tank.

In the North Weir Field the Union Gas and Oil Co. completed two unusually good flush Weir sand producers in No. 16 Proctor Sparks, with 60 barrels and No. 24 P. P. Holbrook, with 80 bbls. This company's No. 5 Laura Skaggs, is a light pumper, and No. 29 J. J. Gambill and No. 3 Herbert Skaggs No. 2 farm, are under way. No. 17 Proctor Sparks, is drilling as is No. 12 Lewis Skaggs for the same company.

Only two completions were reported from the South Weir Field of Johnson-Magoffin Counties. S. D. Wheeler, Trustee, completed No. 10 Frank Conley 100 acres, showing 10 bbls., and R. G. Gillespie's No. 2 J. J. Bliss, in the Elna district, with 5 bbls.

A well out of all bounds for the old Wayne County Field is just reported. It is Ross Wetzel's No. 5 Bell heirs farm, and good for 75 bbls.

The Cumberland Pipe Line Co.'s runs through its gathering lines from the eastern Kentucky division for the week totaled 88,019.75 bbls., for a daily average of 14,069.96 bbls.

This Luling Night Crew Knows Their Stuff

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Using Slush for Lubrication

First from left—G. O. Nokes, tool pusher; Second from left, F. E. Blythe, head driller of night crew.

Right through 131 feet of hard rock with only one pull out, same being necessary on account of the formation.

Contrast this with having to pull out frequently to refill oil chamber (which was the old method.)

Figure the time thus saved—and the risks of the pull out—and you will know one of the big reasons why popular demand for Reed Bits is sweeping rotary fields everywhere.

The run made in 48½ hours with one set of cutters was done **without a drop of lubricating oil,** using slush for lubrication.

Slush lubrication is a Reed system exclusively and is possible in no other bits; this is admitted in sworn testimony by competitors.

The strongest rock bit ever built—likewise fastest and safest.

Drilling crews are at their best when furnished with Reed Roller Bits and Reamers.

Anything that lessens the risk of losing a hole, eliminates needless pull outs and speeds up drilling, wins over the driller—right now.

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The Twentieth Anniversary of the Truscon Steel Company has just occurred. As a compliment to business executives Truscon has summarized the experience it has gained during these two decades in the field of standardized and simplified building, and is presenting it to them in convenient form. These four brochures tell Truscon's story completely. Complimentary copies sent on request

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These brochures and Truscon Service should be of great value to every business executive who is interested in procuring an attractive, substantial and fire-proof building but dreads the uncertainty as to cost and completion date, and the time, trouble and the arduous details incident to building.

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Unit panels permit any size or arrangement of building; and if change of location is desired, Truscon Standard Buildings can be easily taken down and re-erected elsewhere. Used for pumping stations, bulk stations, warehouse, engine houses, filling stations, garages, etc., etc. A size and type for practically every requirement.

All of these typical construction difficulties are eliminated through Truscon Standard Buildings. You know to a penny what your building will cost you, and the exact day when it will be ready for occupancy. There is not a single detail which you need worry about. And in addition, Truscon Standard Buildings cost less than other permanent building construction.

Whether or not you need a building at the present time you should have these four brochures in your files for purposes of quick reference. They are indispensable to your business library. Send for them today. Your request involves no obligation whatever.

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Name.....

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HISTORIC WELLS IN THE AMERICAN FIELDS

(Continued from Page 86)

awaiting orders for some time until it was decided to deepen, as a result of which it was completed as stated above at a depth of 2,008 feet in 63 feet of broken sand with an initial production estimated at 40,000 bbls. The oil is of 23.8 gravity with a temperature of 74 degrees. Casing was set as follows: 12½-inch at 60 feet, 8-inch at 461 feet and 6-inch at 1,850 feet. The well is producing 300 bbls. at this writing.

A Norphlet Gusher

Although looked upon by many as an extension of the Smackover Field, there is apparently little doubt that the Norphlet area is entitled to distinction as a separate pool and the numerous wells running into four-figure production with a low or non-productive area not yet thoroughly well defined between it and the original Smackover Field seems to establish the claim.

The star producer of the Norphlet area is No. 1 Murphy, completed on June 21, 1923, by Broderick & Calvert, 900 feet east and 330 feet south of the northwest corner of the southwest quarter of Section 8-16-15, Union County, Arkansas, at a depth of 2,028 feet. The well has an initial production conservatively estimated at 15,000 bbls. of 22 gravity oil. Casing was set as follows: 15½-inch at 64 feet, 10-inch at 610 feet and 6-inch at 1,822 feet.

Wonderful Well in Wyoming

The largest oil well ever found in Wyoming was that of the Wyoming Associated Oil Co., generally known as No. 20-A and located in the southeast quarter of Section 25-40-79, in the Salt Creek Field about 50 miles from Casper.

This well was drilled in in September, 1918, and started off at an estimated production of 15,000 bbls. daily. The well has been producing daily since that time and is at present making 4,450 bbls. daily after five years of production.

The well is owned by the Wyoming Associated Oil Co., one of the old Reed companies, which were merged to form the Midwest Refining Co., and later became a part of the Standard Oil Co. of Indiana.

Several wells in the Rocky Mountain region made more oil at the start than No. 20-A, but this well is the greatest oil producer of that region. For instance, the big shale well of the Mammoth Oil Co. on Teapot was estimated at 28,000 bbls., when it was flowing in the summer of 1922, but this well a year later was producing less than 50 bbls. daily. It was only 1,250 feet deep.

Well No. 20-A is in the second Wall Creek sand and a depth of 2,250 feet. It was drilled with cable tools and preparations were made for a large well by placing tankage and a control head. However, the well got away for a time and flowed wild.

Montana's Prize Producer

The largest well Montana has ever had drilled inside its borders is that of the Frantz Corp. in the Cat Creek Field, northwest corner of the northeast, northeast, Section 14-15-29, and known in the field as No. 8 Frantz.

This well in June, 1922, found the top of the second Kootenai sand at 1,310 feet and stopped drilling in the sand at 1,325 feet, making 15 feet of sand as far as drilled. The hole was flowing as the tools came out and the well made 5,000 bbls. daily for several days through an open hole and large lead lines, then the lack of storage for the oil compelled the operators to shut the well in and since the time of drilling in it averaged about 3,000 bbls. daily for a year.

It was drilled with a standard rig and cable tools and the casing set to the top of the sand before drilling in. Lew Sontag of the Frantz and Mutual companies had charge of the field for the operators and superintended the drilling in of the big well.

America's greatest producing well was the internationally famous Lakeview gusher in California, drilled by the Union Oil Co. in 1910. It had an initial production of 75,000 bbls. and produced 9,000,000 bbls. of petroleum. This well, located in the San Joaquin Valley, in what is now the Maricopa Field, was started as a wildcat by the Lakeview Oil Co., a small concern, but a crooked hole in which the tools were hopelessly stuck discouraged the operators and they disposed of the property with the one drilling well to the Union Oil Co., which spent eight months and much money in straightening the hole. Pipe was set at 2,200 feet and drilling continued. It was not long after that, March 15, 1910, to be exact, that the well came in. It did not stop flowing until September 11, 1911, 18 months after it started producing. It is still good for 10 bbls. a day. An army of men was kept busy for a long time in constructing earthen storage, strengthened with sand bags, for this champion of all American wells, and when they were finished there was room enough for 10,000,000 bbls. of oil, and this one well provided nine-tenths of that quantity.

Mexican Wells Best Them All

The Mexican fields supplied some very remarkable producing wells but the two most famous in its history were the Mexican Eagle Oil Co.'s No. 4 Potrero del Llano, and the Huasteca Petroleum Co.'s No. 7 Juan Casiano, both drilled in near the close of 1910, giving tremendous impetus to the Mexican oil industry. The Huasteca Petroleum Co.'s gusher came in on September 11, 1910, at a depth of 2,112 feet. It started at 50,000 bbls. This well was pinched down to 22,000 bbls. a day and produced that quantity until November 7, 1919, producing in all about 75,000,000 bbls. of oil. It was the only well in the Juan Casiano Valley of any importance. Forty-five miles southwest of Juan Casiano in the Potrero de Llano district the Mexican Petroleum Co. on December 26, 1910, opened up a production at 1,912 feet that caused one of the greatest battles against the elements ever staged in the history of oil. Lightning struck the well and caused a most spectacular fire. There was an acre of flame to fight but while this was being done the well kept steadily producing at the rate of 25,000 bbls. a day. The fire was finally conquered and the well continued to produce for nearly eight years, until it had yielded 115,000,000 bbls. of crude.

Another great Mexican well was the Huasteca Petroleum Co.'s No. 4 Cerro Azul, which came in on February 10, 1916, and up to the middle of last summer had produced 65,000,000 bbls. of crude and was then flowing 35,000 bbls. a day after seven years and six months of steady production.

RUMANIAN PETROLEUM TRADE

Rumania's petroleum production during the first eight months of this year totaled 1,013,915 metric tons, compared with 899,214 tons and 740,316 tons, respectively, in corresponding periods of 1922 and 1921. Exports of petroleum products from Rumania during the January-August period amounted to 249,927 tons, compared with 246,819 tons in the eight-month period of 1922. The 1923 exports included: Kerosene, 119,400 tons; gasoline, 98,859 tons; gas oil, 19,214 tons; lubricating oil, 11,499 tons; crude oil, 925 tons; and paraffin wax, 30 tons. The export market is now feeling the full effects of the cut in American prices, particularly for gasoline, the demand for which has fallen off considerably.

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CANADIAN FIELDS

(Continued from Page 54)

and six weeks of actual drilling were required, with a 10-hour shift daily.

Most Productive Well

Until this strike was made, the most productive well in western Canada was the Imperial Oil, Ltd., discovery well below Fort Norman, which is a 75-bbl. producer; but too far, from transportation facilities to be a commercial proposition. In the Okotoks Field, southwest of Calgary, there are a number of intermittent gushers with a small individual production of exceedingly high grade crude oil, very similar to gasoline.

The Irma-Fabyan-Waiwright Field lies about 122 miles east of Edmonton, and is cut by the main line of the Canadian National Railways. The famous Wainwright Buffalo Park is in the heart of this area, and cannot be staked for oil. A great deal of territory is already under lease. British Petroleums, Ltd., has about 33,000 acres. Imperial Oil, Ltd., which is drilling its Grattan No. 2 well on Section 14-45-8w-4, holds a large acreage. Territory is also held by the California-Canadian Oil Co., reputed to represent the Union Oil-Dutch-Shell interests; by the Wainwright Oil Development Co., as well as by some local individuals and syndicates. The location of British Petroleums No. 2 is 6 miles north of Wainwright. No. 1 well, about 300 yards from No. 2, has a wet gas production, estimated at 6,000,000 feet a day; and until the present oil production was developed, the company was planning to develop the field largely as a gasoline absorption and carbon black proposition. The company has been financed, partly by British and partly by Vancouver and Edmonton capital.

South of Monitor, the West Regent Oil & Gas Co. deep test on Section 19-34-4w-4 has shut down for the winter. This test has reported several small oil showings but has made relatively little headway this summer, being around 3,500 feet when drilling was discontinued. Work will be resumed early in the spring.

L. R. Oleson, of Coutss, Alta., is reported to be arranging for the construction of a small refining plant at Edmonton.

In southern Alberta, Canadian Western Natural Gas Co.'s No. 7 in the Barnwell Field is reported to have struck gas in commercial quantities at about 2,900 feet. The well has been capped, and 6-inch casing is being run down.

Sweetgrass District

In Sweetgrass district, southern Alberta, the Coutts-Sweetgrass Oils, Ltd., the company which drilled the McLean well on Section 1-1-15w-4, is reported to be giving an option up to February 15 to interests which are proposing a merger of Sweetgrass oil companies. Lethbridge Oils, Ltd., (Baalim) with a test at 2,030 feet on Section 12-1-15w-4, have given a similar option. The new company is to be capitalized at $750,000, and to have at least $100,000 cash for development work on the Quarantine Reserve, Township 1-15w-4, and will take in at least four of the existing companies with extensive holdings in this area.

The Standard Refining Co. plant now under construction at Lethbridge, Alta., is waiting for agitators, stills, condenser box and some large tankage now in transit from Kansas City. The engine house, repair shop, pump house and other buildings are complete, and the boiler has been steamed up and the tankage on the ground is being tested. Water pipes are all in and the oil piping is being connected. The plant is expected to operate some time in December.

In Peace River district, northern Alberta, the Victory-Albertas well, opposite Peace River town, is reported to be testing the oil and gas showings encountered at 1,500 feet before drilling deeper.

In the Athabaska district, S. C. Ells, of the Federal Department of Mines, has completed a survey of the tar sand area along the Athabaska River from the north boundary of Township 87 to the north boundary of Township 100. This work is exceedingly difficult, the country being a remote wilderness of sloughs and muskegs, where all supplies must be packed upon the backs of men, where sleeping out in the snowdrift without shelter is quite usual in winter, with plenty of mosquitoes and bulldog flies in warmer weather. Mr. Ells spent 15 months of the past 17 mapping the tarsands of the McMurray district. As a result of his work the tar sand outcrops are shown to scale on contour maps that will be of great assistance to anyone contemplating development within the area mapped. Doctor Ings, of McMurray is planning to start tar sand development this winter on a location at Horse Creek.

Ontario Fields

In the Ontario Fields, the Glenwood Natural Gas Co.'s well, Hugh Shanks farm, Romney Township, Kent County, is reported to have bridged as a result of caving. It flowed a small quantity of oil on Thursday. No work has yet been done toward getting it in shape. In connection with this well, the following statement has been given out by H. R. Davis of Buffalo, N. Y., general manager of the Southern Ontario Gas Co., of which the Glenwood Natural Gas Co. is a subsidiary.

"The general public, as well as the oil producing fraternity, have evinced a very natural interest in the oil well which was drilled by this company on the Hugh Shanks farm in Romney Township. It is probable that the accounts of this well have been more exaggerated than is usual in such cases. Now that the excitement has subsided a little, a statement of the facts from the company owning the well may be of interest.

"The well in question is 3,560 feet deep. Operations were commenced about the first of last July. Oil was struck about Midnight, October 31. The well commenced flowing early in the morning of November 1. For a week it flowed intermittently, producing about 125 bbls. a day. It then stopped flowing. On November 11 it commenced again, flowed about the same amount this day that it had on previous days, then stopped and has not flowed since. (There have, however, been two flows at intervals since the statement was given out. The company is now preparing to swab or pump the well. It will be at least 30 days before we can determine whether we have a real oil well or whether we have struck a small pocket which will soon be exhausted.

"We would like to see many additional wells drilled to test this territory, but we want the public to understand that the only certain fact at present is that one well has produced a little oil. There may be a splendid field here; there may be a small field, or there may be no field at all."

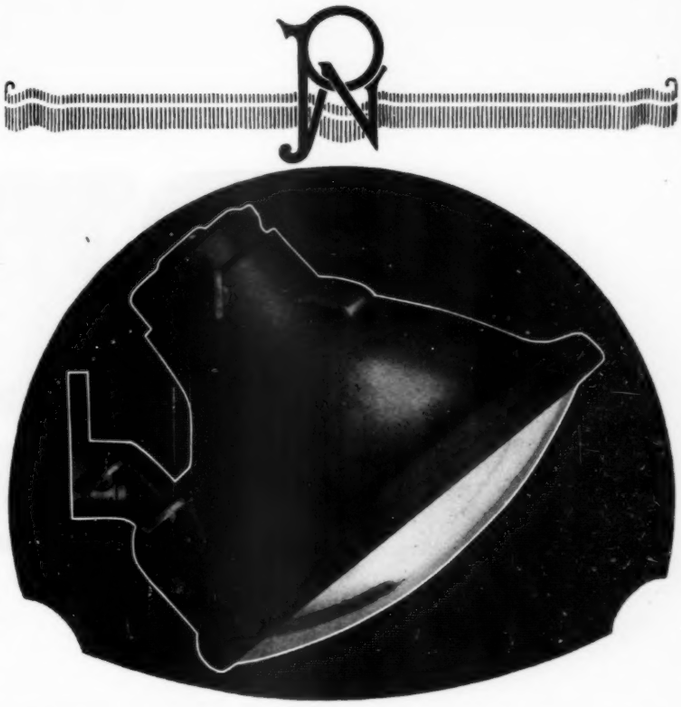
Union Natural Gas Co. No. 248, Truckenbrod farm, is preparing to rim down before drilling into the Trenton limestone. The company is also moving in materials for its new deep test on the Mancell farm, Tilbury East Township.

In the Niagara Fields, the Provincial Natural Gas Co. has abandoned its test for gas on the Charles Baker farm, south of the Garrison road near Bridgeburg. Gas was expected at 2,600 feet, but the test was carried to 3,200 feet without a show.

A small production of surface gas was developed at 55 feet depth on the J. A. Mackness farm, Prince Albert road, Chatham Township, near the city of Chatham. It is not regarded as commercially important.

GASOLINE LIGHTING CHEAPER

Gasoline street lighting in Philadelphia will be cheaper during 1924 than in the current year. The Welsbach Street Lighting Co. has been awarded a contract by the Philadelphia Department of Public Works at $56.90 per lamp. The present price is $57.90 per lamp. The lower bid was due to the recent decrease in price of gasoline. There are about 10,350 gasoline lamps in Philadelphia.



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THE completion of our new plant enables us to serve the petroleum industry in a much larger way than ever before, particularly in the fabrication and erection of field storage tanks of large capacity.

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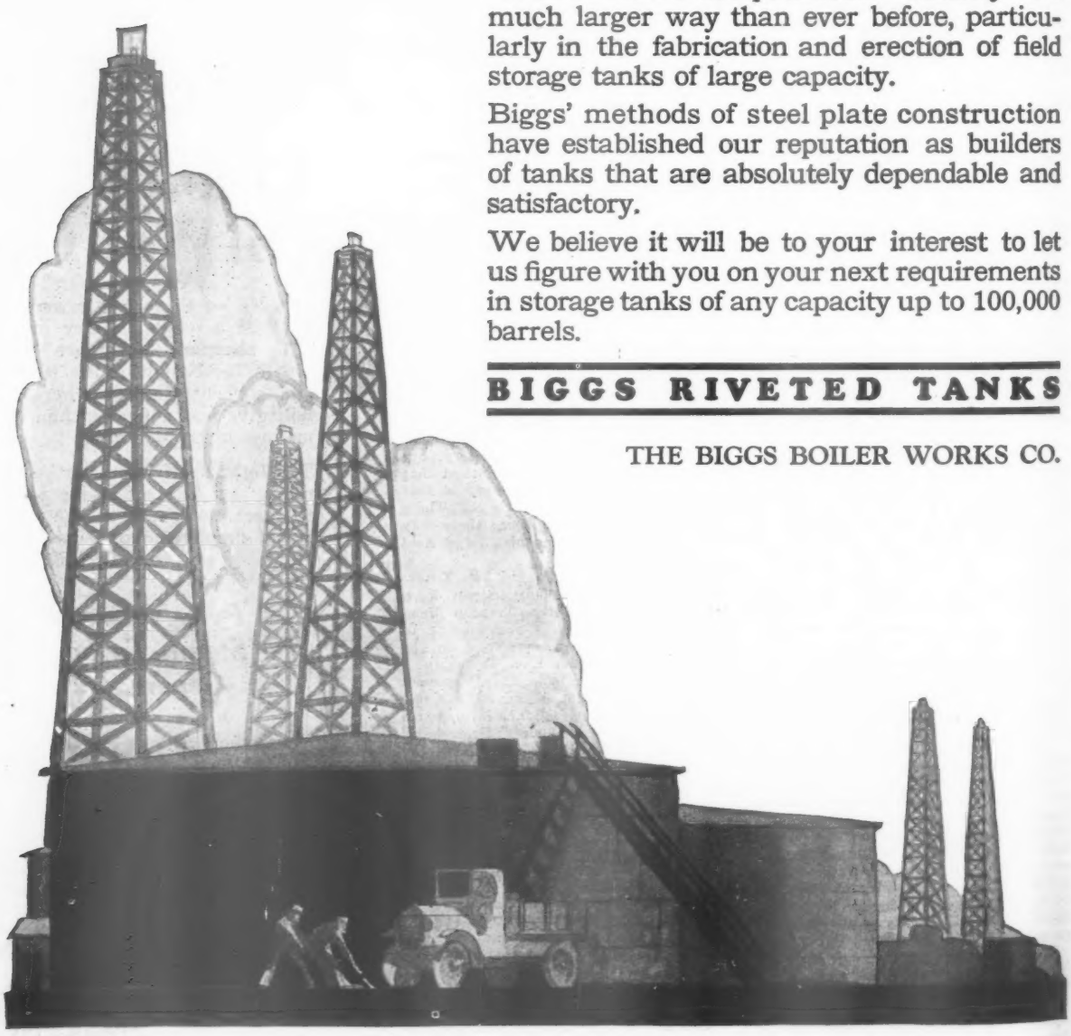

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Refinery Equipment

The exceptional accuracy and precision which is the most characteristic feature of our work, means very definite value to the buyer of Biggs stills, agitators, run-down tanks and other refinery equipment.

Thirty-six years' experience in the fabrication of *only high grade* steel plate products, with a plant and equipment of the most complete and up-to-date kind, recommend us to you as good people to deal with. You know that you will get the best that can be had, that the price will be right, and that you will be *permanently* satisfied with your investment.

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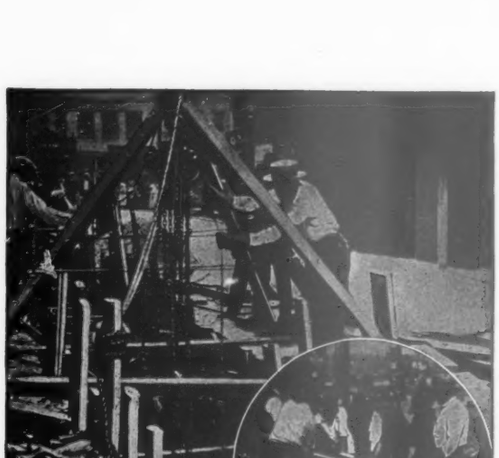

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CALIFORNIA FIELDS

(Continued from Page 42)

oil with a cut of 6 per cent. The Petroleum Midway's other well was No. 1 Ella Clark, a south slope well, finished at 4,375 feet. It was completed with a 4¾-inch oil string landed on bottom and is at present being swabbed for production. The Superior Oil Co. had a little better luck with its No. 2 Miller, an offset to the Shell Oil Co.'s No. 1 Hutton, and completed this north slope well at 4,362 feet. This well, which showed an initial run of 1,700 bbls. for the first 24 hours, is flowing through a ⅞-inch bean under a pressure of 300 pounds, the oil being clean and testing 22.7 degrees. Several wells during the week went off production because of water trouble and this condition on the south side of the structure continues to cause apprehension. The Bush-Voorhies Oil Co. completed a nice well in No. 2 Barnes and, in addition to a good production, the oil is unusually clean. The bit penetrated the oil sands at 4,360 feet and the well responded with a flow of 1,500 bbls. of clean 25.6 gravity oil. It was completed with a 6¼-inch oil string and is flowing through a 1-inch bean under a pressure of 450 pounds.

Santa Fe Springs

The Amalgamated, Standard and Wilshire oil companies each completed two new wells at Santa Fe Springs, the Amalgamated adding 3,250 bbls. of new production, the Standard 2,700 bbls. and the Wilshire 2,250 bbls. The Amalgamated Oil Co.'s new wells were No. 4 Dewenter, finished at 4,608 feet, and No. 1 Green, brought in from 4,720 feet. The former, flowing through a 1-inch bean under a pressure of 400 pounds, is producing 1,500 bbls. a day of clean 33.5 gravity oil, while No. 1 Green, flowing through a 1¼-inch bean under a pressure of 300 pounds, is making 1,750 bbls. a day of 33.1 gravity oil with a cut of 3 per cent.

The two weekly completions of the Standard Oil Co. were both on the Weisel lease, Nos. 6 and 8. The former picked up the pay sand at 4,635 feet, while No. 8 is producing from 4,630 feet. No. 6 Weisel, although slightly deeper, is only producing 450 bbls. a day of clean 32.1 gravity oil, while No. 8 Weisel recorded an initial flow of 2,250 bbls. of clean 33.9 gravity oil. Both are flowing through 1-inch beans, the former showing a pressure of 250 pounds, the latter flowing under a pressure of 400 pounds. The Wilshire Oil Co., which also brought in two wells during the week, increased its production 2,250 bbls as a result. Both wells were on the Frazier lease, No. 4 showing an initial production of slightly in excess of 1,000 bbls. of 33.8 gravity oil, while No. 5 registered an intial production of 1,250 bbls. of 34.6 gravity oil. The output of the former is cutting 5 per cent, while the deduction in the latter case is approximately 3 per cent. No. 4 Frazier, completed at 4,580 feet, is flowing through a 1⅛ inch bean under a pressure of 100 pounds, while No. 5 Frazier, finished at 4,658 feet, is flowing through a 1¼-inch bean under a pressure of 125 pounds. The Wilshire's next producer will probably be No. 1 Surbeck, which has been slightly deepened and is scheduled to be returned to production within a week or 10 days.

The Buckeye Union Oil Co. completed a medium-sized well in No. 5 Irish, the initial production being 1,255 bbls. of 33.6 gravity oil. The bit picked up the pay sand at 4,548 feet and, although the oil is cutting approximately 10 per cent, it is believed this will be substantially reduced after the well has flowed for several days. No. 5 Irish, completed in the Meyer zone, is flowing through a ¾-inch bean under a pressure of 325 pounds.

Smaller Completions

In addition to these fair-sized wells, there were several smaller ones completed, ranging from 275 bbls. to 900 bbls. C. C. Julian put the smallest well on production when he finished his No. 5 at 4,642 feet. This well is pumping 275 bbls. a day of clean 33.9 gravity oil. The General Petroleum Co. recompleted No. 89-A Santa Fe after redrilling and deepening it from the Bell zone at 3,859 feet to the Meyer zone at 4,650 feet. This well, which is making 650 bbls. a day of 31.1 gravity oil. is producing far less as a result of its recent completion in the Meyer zone than its original production in the Bell zone last March. The oil from this well, which is showing a cut of approximately 7 per cent, is flowing through a ¾-inch bean under a pressure of 100 pounds. The same company has two additional wells which should be ready for production shortly, No. 1-A Santa Fe, drilling at 4,620 feet, and No. 11 Santa Fe, showing lots of oil and gas at 4,650 feet.

The Shell Oil Co. was rewarded with a 950-bbl. well during the week when No. 3 Slusher was put on production. This well was finished at 4,674 feet and is making a little better than 950 bbls. a day of 34.3 gravity oil. It is flowing through a ⅞-inch bean under a pressure of 300 pounds. The Shell has seven additional wells drilling on this lease, six being below the 4,000-foot mark, which, upon completion, should help maintain the company's present field production of approximately 12,000 bbls. daily. The Union did not complete any new wells during the week but the company has several about ready to be put on production. No. 14 Bell and No. 20 Bell, both at 4,700 feet, and No. 23 Bell at 4,660 feet should all be put on production very shortly, while Alexander No. 7, drilling in an oil sand at 4,544 feet, should be flowing oil into the tanks some time within two weeks.

George F. Getty completed the smallest well which he has ever completed in the Santa Fe Springs Field when he put No. 12 Baker on a production test at 4,650 feet. The well, finished with a 4½-inch oil string landed on bottom, registered a maximum initial flow of 300 bbls. a day of clean 33.6 gravity oil. The pressure, however, is fairly high, 400 pounds. Although the Petroleum Midway Co. brought in a well it did not profit very much by its completion. Well No. 6 on Mattern lease No. 3 did not maintain the standard established by the other wells on this lease either in the amount of initial production or in the quality of the oil produced. This well, put on production at 4,700 feet, was finished with a 4¾-inch oil string and showed an initial production of 300 bbls. of 28.7 gravity oil. The small production was not the only unsatisfactory part of the completion as its output showed a cut of over 25 per cent emulsion.

Huntington Beach

The Amalgamated Oil Co. secured a 350-bbl. well at Huntington Beach when No. 28 Miley-Keck was put on production. It was finished at 3,885 feet, the oil flowing through a ⅞-inch bean under a pressure of 200 pounds, testing 22.9 degrees and showing a cut of 2 per cent. In addition to this well, the company passed No. 20 Miley-Keck, finished at 3,464 feet, for a production test, the outcome of which will be decided within a few days. No. 3 Savage of the Petroleum Midway Co., the only other well put on production during the week, was only a small pumper. It was put on production at 4,850 feet and is pumping 55 bbls. a day of 23.1 gravity oil with a cut of 1 per cent. The Southern California Drilling Co. is running in and will land a 4¾-inch oil string on bottom in the Federal Consolidated's well No. 1, finished at 3,677 feet. A nice sand was picked up at 3,350 feet and the company is looking for at least a 200-bbl. well. The Oregon California Oil Co. is making preparations to set a string of 6¼-inch at 3,456 feet and, while only a fair-sized well is expected, it may prove a surprise.

Torrance

The number of completions at Torrance is gradually beginning to increase, the 11 completions listed during the current week being the largest number of new wells put on production during any seven-day period since the field was opened. The C. C. M. Oil Co. brought in three wells, one of which sanded up.

The company finished two wells on the Torrance lease, Nos. 11 and 12, and one on the Del Amo lease, No. 8. No. 11 Torrance was finished at 3,635 feet with an 8¼-inch oil string and was brought in flowing 125 bbls of 23.2 gravity oil, but it had sanded up the following day and is now being cleaned out. No. 12, the other completion, was put on the beam at 3,615 feet and started off pumping 115 bbls. of 24.2 gravity oil with a cut of 4 per cent. No. 8 Del Amo was finished at 3,555 feet with an 8¼-inch oil string and is pumping a little better than 100 bbls. a day of 21.1 gravity oil with a cut of 2 per cent. No. 7 Torrance of the Superior Oil Co. was probably the best completion during the week in quantity and quality. This well, completed at 3,752 feet with a 4¾-inch oil string, is flowing 1,750 bbls. a day of 27.2 gravity oil through a ⅝-inch bean under a pressure of 310 pounds. Well No. 6 on the same lease, completed last week, is still holding up fairly well, the present production being 910 bbls. daily.

The Cook Drilling Co. also completed a nice well, its No. 1, put on production at 3,750 feet, being brought in during the latter part of the week as a 1,400-bbl. producer. The oil from this well is comparatively clean and tests 24.3 degrees. The Petroleum Securities Co. finished two wells on the Marble lease, both of which are making approximately 1,100 bbls. a day of 26.5 gravity oil. No. 2 was completed at 3,730 feet, while No. 3 was finished at 3,760 feet. The completion of these two wells brings the total number of producers on this lease to three. Well No. 4 is drilling at 3,450 feet, while No. 5 is making hole at 765 feet. In addition to these drillers, rigs have been erected for Nos. 6, 7, 8, 9 and 10. George F. Getty successfully put two wells on production, one doing 1,100 bbls. and the other 350 bbls. No. 3 Torrance, put on production at 3,720 feet, is flowing 1,100 bbls. a day through a 4½-inch oil string, while No. 5, brought in from 3,250 feet, is pumping 350 bbls. a day. The oil from No. 3 tests 24.9 degrees and shows a cut of 2 per cent, while the output from No. 5 tests 23.7 degrees and shows a cut of 3 per cent.

The Empire Drilling Co. completed a 1,050-bbl. well for Barnett Rosenburg during the week and is making preparations to drill No. 2 on the same lease, rig material having been ordered upon completion of No. 1. This well, No. 1 Glady,s was finished at 3,720 feet and was brought in through a 4¾-inch oil string landed on bottom. The oil, which tests 23.8 degrees and shows a cut of 4 per cent, has been cleaning up nicely during the past few days. The Gilmore Oil Co. also brought in a well during the week and increased its number of producers in this field to two. No. 2 Torrance, the Gilmore Oil Co.'s new well, was finished at 3,720 feet and showed an initial production of 1,200 bbls. a day. The oil tests 24.4 degrees and shows a cut of 2 per cent. The Federal Drilling Co.'s No. 1 Gerner has been returned to production after being cleaned out, but instead of being a flowing well it is now a pumper, doing 195 bbls. of clean 20.1 gravity oil. The same company's No. 1 Heyman, which blew in last week while being bailed for a water test, has declined from 2,000 bbls. a day to approximately 1,500 bbls.

The Standard Oil Co. set a string of 8¼-inch at 3,563 feet and, while many seem to think that the Standard has a well, company officials do not consider the showings of any great importance. There were several locations spotted during the week and several new wells spudded. The Grunwell Oil Co., after drilling a dry hole at Santa Fe Springs, has erected a rig and is scheduled to begin operations within the next week or 10 days, while the O'Donnell Oil Co. will also begin drilling very shortly as a rig is being erected for well No. 1.

Miscellaneous Drilling

There is nothing new of importance at Compton except possibly the development of a fishing job in the Davis & MacMillan well at 4,269 feet. The Julian Petroleum Corp., after being held up for several months as the result of a bad string of casing around 400 feet, is making a little headway and expects to have the hole cleaned out within the next two weeks. The Standard Oil Co., drilling a wildcat near Anaheim, No. 1 Wagner, has reached a depth of 1,965 feet and is making hole in a hard sandy formation.

There is nothing of particular importance in either the Artesia or Bellflower districts, while the Pan-American's El Segundo wildcat, No. 1 Pacific Southwest, is still standing cemented but should be drilled out during the coming week. In the San Jose Hills, several new wells have been proposed and one, the Rancho La Puente Oil Co.'s No. 1, was spudded in during the early part of the week. H. A. Bardeen is making preparations to plug back his No. 2 and put the well on a production test at 2,500 feet in an attempt to secure production at this depth. The San Pedro Point Fermin Oil Co., drilling a well at the base of a cliff near San Pedro, Los Angeles Harbor, has reached a depth of 2,815 feet and reports a slight showing of gas. Production is expected around the 3,000-foot level.

Field Operations

Oil field operations reported to the State Oil and Gas Supervisor show permits issued for 32 new wells, as compared with 17 during the previous week, a total for the current year to date of 1,267, compared with 1,277 at the same time last year. Permits were issued for the following new wells:

Torrance

Location, company, well—
Barnett Rosenburg—
23-4-14 Arline, 1.
California Drilling Co.—
22-4-14 Black Diamond, 1.
C. C. M. O. Co.—
16-4-14 Del Amo, 9.
23-4-14 Cannon Drilling Co., 1.
10-4-14 Fred B. Foster & Co., 67.
22-4-14 Fred B. Foster & Co., 68.
Hub Oil Co.—
14-4-14 B. & C., 2.
14-4-14 Hutslar, 1.
14-4-14 Stachowicz, 1.
14-4-14 Stachowicz, 2.
23-4-14 International Drg. & Eng. Co. 1.
23-4-14 Long-Wall, 4.
14-4-14 Midway Northern Oil Co., 3.
Pet. Midway Co., Ltd.—
Stock Com., 2.
15-4-14 Pet. Securities Co., 5.
22-4-14 Pet. Securities Co., 6.
Pet. Midway Co., Ltd.—
15-4-14 Deitrick, 1.
23-4-14 Sanita Petroleum Co., 1.
Star Petroleum Co.—
11-4-14 B. & R., 1.
Superior Oil Co.—
14-4-14 Torrance, 13.
14-4-14 Torrance, 14.
Universal Cons. Oil Co.—
23-4-14 Jones, 1.

Compton

35-3-14 Barnett Rosenburg, 1.

Long Beach

19-4-12 R. E. Ibbettson Drilling Co., 2.

Santa Fe Springs

Standard Oil Co.—
36-2-12 Jordan, 5.

OPEN DOOR IN MESOPOTAMIA

Great Britain will probably approve the drafts of the conventions submitted by the American State Department conferring upon the United States equality of commercial opportunity in the former German possessions of western Samoa, the Island of Nauru in the Pacific, and the southwest Africa protectorate. The British Government also favors extension to America of similar economic rights in Palestine, Syria, Mesopotamia and other countries under the League of Nations mandate, despite the fact that the United States is not a member of the league.

RUMANIA TO SELL FRANCE OIL

The Rumanian Government is reported about to conclude negotiations for the sale to France of its share in production of private Rumanian oil companies for the next 10 to 12 years at a price not exceeding 800,000,000 francs. This sum is nearly equivalent to the recent French loan to Rumania for military purposes. Railway credit of £3,000,000 offered by a syndicate of three British firms has been delayed because the British are unable to furnish immediate cash. The railway extension plan would give Britishers a voice in the control of the national Rumanian lines.

BYERS
GENUINE WROUGHT IRON
PIPE

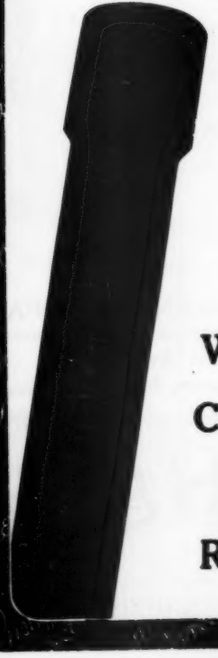
RUST-RESISTANCE

is the biggest word in pipe durability

Not long ago, the superintendent of a large gas company had occasion to pull the casing from some 8 or 10 old gas wells. In all but two of these, the casing was Byers, and was pulled without the loss of a foot of pipe. In the remaining two wells, the steel casing pulled apart repeatedly, having suffered so severely from corrosion as to be unable to stand the stress of pulling, and very little of the pipe was fit to use again.

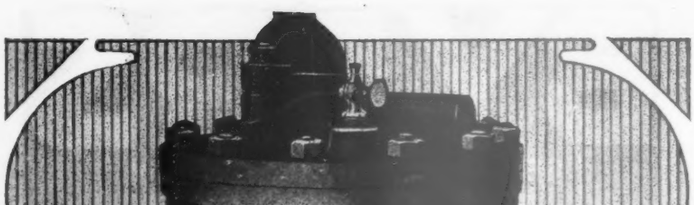
The life of casing, line pipe, and tubing, largely depends on their rust-resistance. Byer's genuine iron pipe is known to **"wear"** better than steel pipe, largely because, after years of service, it suffers so little from rust that it retains its original physical strength and clean, accurate threads.

A. M. BYERS COMPANY
Established 1864
PITTSBURGH, PA.



Representatives:
S. D. OLIPHANT, Tulsa, Okla.
J. A. ARMSTRONG, Los Angeles, Calif.
E. A. SMALL, Jr., 1614 Carter Bldg., Houston, Texas

Genuine
Wrought Iron
Casing Tubing
Line Pipe
Refinery Pipe



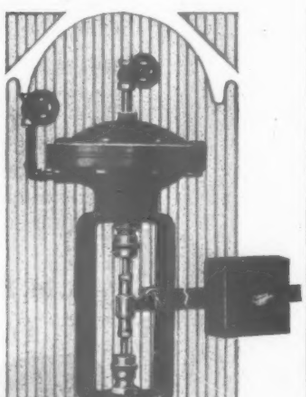
Absolute, Automatic Discharge

of Water and Condensation

Water and condensation, collecting in pipe lines, coils or other apparatus, retard circulation of steam and lower the heat units. Steam does not come in direct contact with heating surface.

The Fisher Steam Trap absolutely and automatically removes the water, discharging it as fast as it condenses **without losing any steam pressure.**

As the water accumulates in the pot or body of the trap, it flows into a non-collapsible bucket, which, as it becomes filled, submerges and opens an auxiliary valve. The water is then discharged freely until down to low water mark.



Fisher Excess Pressure Governor

When pressure varies, it is impossible to successfully control a steam-driven boiler feed pump or turbine by hand. Yet its very efficiency depends on the load being constant. This requires a sensitive, automatic control such as is supplied by the Fisher Excess Pressure Governor.

The control is of the diaphragm actuated type. The steam pressure is connected to the under side and feed line pressure to the upper side of this diaphragm. The correct pressure balances the weight and lever. The slightest excess affects this balance and automatically closes the steam valve.

THE FISHER GOVERNOR COMPANY
Dependable Power Plant Specialties
350 Fisher Ave.
Marshalltown, Iowa

Late News From the Fields

OKLAHOMA

A well that flowed at the rate of 3,000 bbls. was brought in by F. A. Gillespie within 5 miles of Tulsa in the NW cor. NE NE NE, Section 8-20-12, Osage County. The second break in the Mississippi lime was topped at 2,052 feet. Late estimates were that the well was making 1,500 bbls. and had a small show of water.

The Shaffer Oil & Refining Co. and others shut down their No. 1 Bruner, C NE SE, Section 6-19-12, Tulsa County, on top of the sand at 1,916 feet after getting about 1,000,000 feet of gas and a good show of oil. It will be drilled in as soon as pipe line connections are made. The Sand Springs Home's No. 1 Radey, SW cor. Section 6-19-12, was also shut down after flowing about 100 bbls. in 10 hours from the Wilcox sand at 2,100 feet and drilled 3 feet in.

In the Bristow district, Collopy and others topped the Dutcher sand at 3,050 feet and picked up the pay at 3,060 feet in their No. 1 Freeman, SW cor. NW, Section 9-16-9. The 5-inch liner was set at 3,065 feet.

E. R. Black's No. 1 Murrell, SW cor. NW NW, Section 26-13-11, Okmulgee County, was good for 140 bbls. from sand found at 2,528 feet.

Gasser Breaks Loose

The Pure Oil Co.'s 10,000,000-foot gasser, No. 1 Livingston, SE cor. NW, Section 19-17-9, Creek County, which was shut in at 2,648 feet in the Bartlesville sand topped at 2,640 feet, broke loose and an effort was being made to shut it in again.

In McIntosh County, J. E. Wibble and others abandoned No. 1, SE cor. NE SW, Section 16-12-17, as dry at 2,341 feet. H. P. Lee and others had a rig on the ground for their No. 1, SW cor. NE NW, Section 13-12-7.

Cromwell and others' No. 1 Bruner, NW cor. NE SW, Section 15-10-8, Seminole County, was making 304 bbls. from sand at 3,480-92 feet. The same interests were digging a cellar for No. 2 Bruner, C SW NE SW, same section. Holmes & Jarvis were swabbing 50 bbls. of oil and 10 bbls. of water from No. 1 Harjo, C NE NE SE, Section 21-10-8, in sand at 3,484-98 feet. The Tidal-Osage Oil Co. made a location for No. 1, SE cor. NE, Section 21-10-8, and were moving in material. Gilcrease and others' No. 1 Bruner, NW cor. NE, Section 20-9-9, made 225 bbls. the second 24 hours, and the next gauge showed 118 bbls.

In Creek County, Frank Moore's No. 2 McDermott, NE cor. NW SW, Section 16-16-9, was estimated to be good for 100 bbls. It had a hole full of oil from the Bartlesville sand at 2,658-86 feet, and will be shot with 150 quarts. The Glasgow Oil Co. was swabbing 95 bbls. from No. 4 Williams, NW cor. SW SE, same section, from sand at 2,950-64 feet. McFarland & Brown's No. 1 Whittaker, SE cor. NE SE, Section 20-16-9, was making 62 bbls. naturally from the Bartlesville sand at 2,680-81 feet.

A Beckham County well, the Rubana Oil Co.'s No. 1 Thompson, SW cor. NW NE, Section 22-9-23w, was plugged back from 3,440 feet to 2,771 feet and the 6-inch casing set at 2,110 feet. It was making 4,650,000 feet of gas from sand at 2,635-92 feet.

Garvin County also had a gasser. The Pauls Valley Oil & Gas Co.'s No. 3 Newberry, CNL SE SE SW, Section 13-1n-3w, was good for 5,000,000 feet from 1,190 to 1,240 feet.

In Hughes County, a couple of rigs were on the ground for the Margay Oil Co.'s No. 1, SE cor. SW SW, Section 17-9-9, and for the Oklavania Oil Co.'s No. 1, SW cor. SE, same section.

Grady County reported another failure. Dr. Riddle of Chickasha abandoning his No. 1 Bennett, NW cor. NE, Section 22-5n-7w, at 1,588 feet. Arrasmith and others were moving in tools for their No. 1, NE cor. SE, Section 17-5n-7w. The Nichols Drilling Co. was drilling at 625 feet in its No. 1, SE cor. SW, Section 11-6n-8w, and Badgett and others were drilling No. 1 McFarland, NE cor. SW NW, at 240 feet. Stogner and others' No. 1 Chandler, C SW NE NE, Section 23-5n-8w, was a rig.

Another wildcat found a show of oil, the United 8 Oil Co., finding it in No. 1 Merryman, CNL NW SW NW, Section 36-5s-6e, Marshall County, at 778 feet. The well was shut down, waiting for casing.

KANSAS

In Greenwood County, the Mid-Kansas Oil & Gas Co. was swabbing 100 bbls. in No. 2 Ladd, SE cor. SW, Section 19-25-9, from sand at 2,409-51 feet and will give it a shot.

In Cowley County, the Arkansas Fuel Co. abandoned as dry at 3,129 feet its No. 1 Morris, SE cor. Section 1-32-4. The Buffalo Trust Co. was rigging up a machine for No. 7 Kakue, SE cor. NE, Section 24-32-4. J. A. Hull's No. 2 Gehlke, SE cor. NE NE, Section 26-32-4, was making 250,000 feet of gas from sand at 633-677 feet. Reynolds and others abandoned the location for No. 1 Charles, SW cor. NW, Section 30-32-5.

In Stephens County, the Carter Oil Co.'s No. 5 Ridge, CEL SE SE NW, Section 30-1n-8w, was making 80 bbls. from sand at 2,273-82 feet.

The Magnolia Petroleum Co.'s No. 3 Chandler, NW cor. SE NE, Section 26-2s-6w, Stephens County, was dry and abandoned at 1,785 feet.

The Old Colony Oil Co.'s No. 5 Rockwood, NE cor. SW SW, Section 20-1s-8w, Stephens County, was good for 3,000,000 feet of gas from sand at 1,832-40 feet.

In Jefferson County, the Empire Gas & Fuel Co. abandoned No. 2 Bohanan, NE cor. Section 23-3s-7w, as dry at 5,737 feet.

The Quanah Oil Co.'s wildcat in Tillman County, No. 1-A Hannon, SW cor. NE SW, Section 35-3s-16w, was a failure at 2,000 feet.

In Elk County, Thad O'Day was drilling at 200 feet in his No. 1 Troup, SW cor. Section 15-30-11. Clark and others were also drilling their No. 1 Jackson & Moorehead, C SE NW, Section 26-29-9, at 1,200 feet, and Roth & Co. had a rig up and were moving in tools for No. 1 Westfall, NE cor. SW, Section 13-29-8. J. Croft and others' No. 1 Burge, SW cor. NE, Section 13-30-8, was good for 2,500,000 feet of gas from sand at 1,665-72 feet.

LATE COMPLETIONS IN POWELL, TEX., FIELD

CORSICANA, Tex., Nov. 27.—Yoder and others extended the Powell producing area one location with a 2,000-bbl. well, their No. 1 on the Harvard farm, Mathews survey. It offsets the Mutual Oil Co.'s Howell lease on which some big wells have been completed, but which is now producing only 5,000 bbls. a day. The Mutual Oil Co.'s No. 5 Howell, the latest completion on the lease, is down to 2,000 bbls. The Gulf Production Co.'s No. 2 Bush, on the Smith survey, got sand at 2,906-44 feet, but its initial production, 750 bbls., indicates that it is close to the edge of the pay in that part of the field.

Other wells reported were as follows:

Humble Oil & Refining Co.'s No. 13 Irvine, Taylor survey, sand at 1,570-80 feet, with a very small showing of oil. Abandoned.

New Domain Oil Co.'s No. 5 Kent, Barry survey, sand at 3,020-30 feet, no oil. Abandoned.

Humble Oil & Refining Co.'s No. 12-B Ramsey B, Smith survey, sand at 2,922-25 feet, 1,200 bbls.

Humble Oil & Refining Co.'s No. 18 Humphreys, Smith survey, sand at 2,884-2,965 feet, 1,442 feet.

Humble Oil & Refining Co.'s No. 14 Humphreys, sand at 2,899-2,974 feet, 250 bbls.

Today's Plenty No Insurance Against Tomorrow's Famine

The frantic search for oil carried on about three years ago, resulted, says E. W. Marland in the California Mining & Oil Bulletin, in the finding of new pools in which about 4,000 wells were drilled that now produce an aggregate of over 1,000,000 barrels of oil per day, or an average of 250 barrel per well. This amount of oil, in addition to the 1,000,000 barrels daily coming from 275,000 wells, an average of less than 4 barrels per well, brought about a condition of overproduction.

Ten to twenty per cent more oil is being produced than the world's markets need. It is common knowledge that the rate of production of new wells will not be producing one-half so much oil within six months as they are producing today, and that unless we find within a year new pools which will produce a large number of wells, we shall have the old fear of an oil famine again before us. For that reason, today's plenty is no insurance against tomorrow's famine, but, on the contrary, will, if I read the signs aright, make something very like a famine certain to come at an early date.

From my experience with oil wells, I would say that the production from the wells now producing in the United States will not exceed 1,500,000 barrels daily this time next year, or one-half million barrels daily, less than the present rate of consumption.

CALIFORNIA REFINERY OCTOBER STATISTICS

October reports to the United States Bureau of Mines show there were 40 refineries in operation during the month with a total daily indicated capacity of 512,490 barrels of crude oil. Based on the crude oil run to stills these plants were operating at 93.3 per cent of their capacity.

Output for October

Oils run to stills, bbls.:	
Domestic crude	14,748,709
Casinghead gasoline	85,921
Total oils run	14,834,630
Refined products:	
Gasoline, gals.	119,134,600
Kerosene, gals.	15,468 701
Gas and fuel oils, gals.	413,918,093
Lubricants, gals.	8,281,004
Asphalt, tons	44,186
Other finished products, gals.	5,591,284
Losses, gals.	9,102,502
Net production of domestic partly refined oils, gals.	41,250,730

Stocks on Hand

Crude oil and partly refined products, bbls.:	
Domestic crude	6,647,300
Domestic partly refined	11,405,536
Total oils to be run	18,052,836
Finished products:	
Gasoline, gals.	158,441,451
Kerosene, gals.	24,867,976
Gas and fuel oils, gals.	675,571,755
Lubricants, gals.	12 716,142
Wax, lbs.	198,581
Asphalt, tons	13,197
All other finished products, gals.	291,897
Gross production of tops, gals.	41,650,027
Gross stocks of tops, gals.	383,850,552

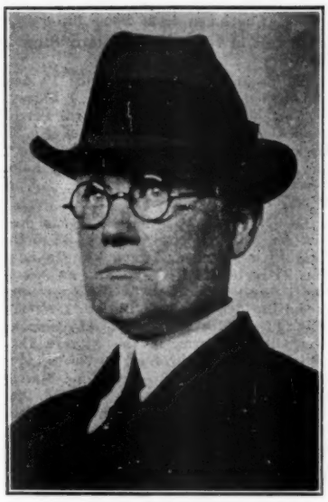
DECISION FOR STANDARD OIL

LONDON, Nov. 26.—The House of Lords has allowed the appeal of the Standard Oil Co. of New York from the decision of the Court of Sessions in Edinburgh last December in its claim against the Clan Line, steamship operators, for £111,225 damages for the loss of a cargo shipped aboard the steamer Clan Gordon, which sank in July, 1920, in a smooth sea while bound from New York for China. The plaintiff charged that the master had emptied two water ballast tanks, altering the ship's equilibrium so that a quick turn of the helm made her turn over and sink.

HIGHER KEROSENE DUTY

The duty on kerosene (flashing point 85°) in British Guiana has been increased from 25c to 50c per gallon under the general tariff, and from 12½c to 25c per gallon under the British preferential tariff, by an ordinance passed and effective August 3.

NEW "OCECO" MANAGER



George T. Bloom

George T. Bloom, formerly general sales manager of the eastern division of the Pure Oil Co., has been appointed eastern manager for the Oil Conservation Engineering Co., in charge of the New York office of the company, recently opened at 140 William Street, New York. Mr. Bloom has been in the oil business for more than 20 years, serving in various capacities with the Tide Water Oil Co., the Atlantic Refining Co., the Petroleum Products Refining Co. and the Crew-Levick Co., for which firm he occupied the position of district manager for northern Pennsylvania. He was also manager of the Tydol department of the Tide Water Oil Co.

COL. HUMPHREYS SEEKS NEW FIELDS TO OPEN

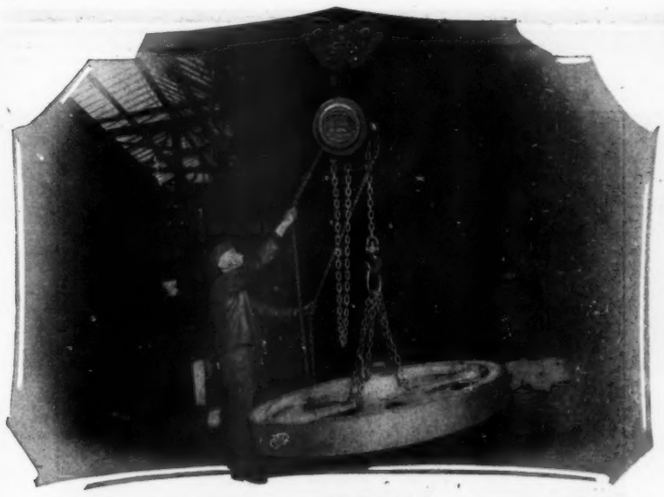
Col. A. E. Humphreys and some of the capitalists who were associated with him in the Humphreys Petroleum Co., and later the Humphreys Oil Co., in which latter company the Pure Oil Co. purchased a controlling interest recently, will continue to explore for oil through the medium of the Boyd Oil Co. This organization recently took over the Little Frank Oil Co., another Humphreys concern. It has a large acreage in Oklahoma, Kansas, Texas, Louisiana and Arkansas, and has several wells drilling in Texas. Colonel Humphreys is a bold and persistent wildcatter. He opened the Billings Pool in Oklahoma and the Mexia Field in Texas and was a leader in the exploration work in Navarro and other Eastern Texas counties. The Humphreys Oil Co. was in the Powell Field early and its best lease, the 320-acre McKie property, was directly in the line of production. John B. Means, E. I. Newblock and N. J. Gubser, all of Tulsa, are associated with Colonel Humphreys in the Boyd Oil Co. The Humphreys Carbon Co. has increased its capitalization from $2,000,000 to $3,000,000. It has big gas interests in Louisiana and manufactures carbon black

CANADA'S OIL OUTPUT

The Dominion Bureau of Statistics issues the following finally revised statistics on the production of crude petroleum in Canada during 1922, which was 179,068 bbls. and 187,541 bbls. in 1923; Alberta produced 6,559 bbls. of this amount in 1922, and Ontario 164,731 bbls.

DEATH OF JACK RHEIL

Jack Rheil, superintendent of the Cabin Creek refinery of the Pure Oil Co, at Cabin Creek, W. Va., died at that place, following a very serious operation.



MULTIPLY YOUR MAN VALUE

THIS man with the aid of Yale Hoisting Equipment can lift and transport a ton load twenty feet in 40 seconds, thus saving time as well as labor.

The modern industrial plant attains increased production and reduced cost by clipping seconds off the time required to handle materials. Yale Equipment produces this result by making the work easier for the men—thereby stimulating them to do more and better work.

Yale Spur-Geared Chain Blocks and I-Beam Trolley Systems, as illustrated above, furnish management the material handling equipment for attaining high-speed production.

YALE MADE IS YALE MARKED

YALE
Chain Blocks, Electric Hoists } For Lifts
I-Beam Trolleys, Industrial Trucks } For Shifts

The Yale & Towne Mfg. Co.
Makers of Yale Products: Locks, Door Closers and Material Handling Equipment
Stamford, Conn., U. S. A.

YALE Hoisting and Conveying Systems

Short Lengths of Larger Sized Seamless Tubing

Short Heavy Wall Headers for Oil Refineries

Tubing in Short Lengths for Roller Bearing Racers

When tube requirements for refinery are unusual, the Wm. Wharton, Jr. & Co., Inc., is in position to serve you.

The experience of our several plants in the manufacture of forgings, and special tubes in short lengths to fit unusual conditions, etc., is at your command.

When you are in need of such things, or when you are confronted with any special problem in connection with refinery equipment, we solicit your inquiry.

Wm. Wharton, Jr. & Co., Inc.

(Founded 1859)

30 Church St., New York, U. S. A.

Cable, Wilwharton, New York

N. LOUISIANA-ARKANSAS

(Continued from Page 46)

2,120 feet in No. 4 Myer Estate, Section 32-15-16.

Lanier and others set surface 10-inch and drilled to 720 feet in No. 1 Shirey, Section 30-15-16. The Leonard Petroleum Co. has moved derrick off No. 1 Hicks, Section 27-15-16, at 2,024 feet and temporarily abandoned the hole. Lewis & Clark started drilling No. 3 Berry, Section 24-15-17.

The Magnolia Petroleum Co. has derrick on No. 2 Patton, Section 32-15-16, formerly reported as rigged up. In Section 31-15-16 it has derrick up on No. 3 Smith; and in Section 32-15-16 set surface 15½-inch in No. 3 Patton, formerly reported as No. 2. The Majestic-Smackover Oil Co., formerly the Altoran Co., set 6-inch at 2,240 feet in No. 1 McElroy, Section 29-15-16. The Metric Oil Co. tested salt water at 2,313 feet and is running core barrel at 2,320 feet in No. 3 Horton, Section 36-15-16, formerly reported Smith No. 3, and completed as a small producer in May, 1923. Miller and others are arranging to deepen No. 4 Hardin, Section 28-15-16, completed with 150 bbls. in April, 1923, at 2,020 feet.

The Ohio Oil Co. is arranging to deepen No. 2 Reeves, Section 28-15-16, formerly a Waite Phillips operation and now at 2,000 feet. The Owenwood Oil Corp. set surface 12½-inch and has drilled to 625 feet in No. 2 Snyder, Section 34-15-16.

Walter Petfier is drilling at 1,955 in No. 1 Eagle Mills Co., Section 25-12-16. The Peer Oil Co. is pulling liner to deepen No. 1 Mullins, Section 27-15-16, completed in May, 1923, with 150 bbls. at 2,075 feet. In Section 21-11-17, the Pure Oil Co. is drilling at 2,335 feet in shale, in No. 1 Moline Timber Co. The Penguin Oil Co. is cleaning out to deepen No. 1 McDonald, completed with 10,000 bbls. in October, 1922, in Section 1-16-16. J. D. Reynolds is rigging up to drill No. 1 Smith, Section 25-15-17.

The Simms Oil Co. has made location for Nos. 4 and 5 Hildebrand, and has started drilling and set surface 12½-inch in No. 6 Hildebrand, in Section 28-15-15. The Smith Refining Co. set 10-inch at 1,170 feet in No. 2 McRae, Section 30-15-16. Snowden & McSweeney are drilling in gumbo at 1,850 feet in No. 2 Taylor, Section 29-15-16. The Standard of Louisiana set 6-inch at 1,885 feet in No. 2 Solmson and has derrick up for No. 3 Solmson, in Section 29-15-16. Stumpf & Bedell have derrick pattern on location for No. 1 Townsite, Section 20-15-16. The Sun Oil Co. is arranging to swab at 2,255 feet in No. 2 Patton, Section 31-15-16, with 1,600 feet of oil in the hole. The Sure Oil Co. is pulling liner to deepen No. 2 B. T. Lane, Section 21-15-15, completed in December, 1922, with 1,000 bbls.

The Texas Co. is setting 2½-inch at 2,275 feet in No. 2 Solmson, Section 29-15-16, with 71 feet of sand. The V. K. F. Drilling Co. set 10-inch surface casing and has drilled to 900 feet in No. 2 Patton, Section 32-15-16 and has made location for No. 3, and has derrick pattern on No. 4 in the same section. The Woodley Petroleum Co. is rigging up to drill No. 1 T. C. Patton, Section 32-15-16. White and others set 6-inch at 1,840 feet in No. 2 Watt, Section 30-15-16.

Ouachita County-Stephens Field

Several wells were put on the beam last week in the Stephens district, but no new work was started.

The Mutual Oil Co.'s No. 4 Hamilton, in Section 19-15-19, made a 50-bbl. pumper at 2,142 feet.

The Shaffer Oil & Refining Co. completed Brown E-4 in Section 18-15-19, pumping 35 bbls. at 2,097 feet.

The Standard Oil Co. completed No. 1 L. Jones in Section 30-15-19, pumping 20 bbls. at 2,104 feet and No. 1 W. Jones, in Section 31-15-19, pumping 40 bbls. at 2,200 feet.

The Atlantic Oil Producing Co. set 6-inch casing at 2,025 feet in No. 3 John Webfer, Section 30-15-19, and Leeper Trustee, which got a showing of oil at 2,181 in No. 1 Wesson, Section 23-15-19, is arranging to drill deeper.

Columbia County

The Atlantic Oil Producing Co. completed No. 3 Milner in Section 24-15-20, pumping 15 bbls. at 2,130 feet.

The Shaffer Oil & Refining Co.'s Milner E-4, in Section 24-15-20, made a 35-bbl. pumper at 2,097 feet.

The Atlantic Oil Producing Co. is rigging up to drill No. 4 Milner, in Section 24-15-20; Pete Hoffman and others are drilling at 1,800 feet in No. 1 Buffington, Section 24-15-20, and Wingfield and others are arranging to pump No. 4 Milner, Section 23-15-20, at 2,152 feet.

Smith & Compton completed No. 1 Duffer, Section 35-18-19, pumping 40 bbls. at 2,162 feet.

Bellevue District-Bossier Parish

Bliss & Weatherbee are arranging to pump No. 10 Bliss & Weatherbee, Section 15-19-11, at 415 feet. The Humble Oil & Refining Co. set 6-inch casing at 315 feet in No. 20, Roy, Bliss & Weatherbee, Section 15-19-11, and made locations for Nos. 24, 25, and 26 in the same section.

Olmstead and others are drilling at 290 feet in Strange A-10, Section 23-19-11; R. O. Roy is bailing 10 feet of sand at 368 feet in No. 22 Scanland, Section 15-19-11 and drilling at 150 feet in No. 23 in the same section, and the Standard Oil Co. is drilling at 368 feet in No. 9 Bliss & Weatherbee, Section 10-19-11.

Caddo Parish

Brewer & Sewell set liner and are bailing 10 feet of sand at 2,418 feet in No. 1 Sharp, Section 15-18-16. The Dixie Oil Co. is drilling at 1,220 feet in No. 2 State, Section 13-21-15.

The Fortuna Oil Co. is bailing to test at 1,670 feet in No. 18 Robertshaw, Section 14-21-15, and the Humble Oil & Refining Co. is arranging to test at 2,817 feet in No. 1 Youree Randolph, Section 24-20-15. The Muslow Oil Co. set 6-inch casing at 2,050 feet in No. 2 Brown fee, Section 32-21-15.

Claiborne

The El Dorado Chief Oil Co. abandoned its test on the McKenzie lease in Section 35-22-7, at 2,752 feet, one of the deepest tests ever made in this territory. The Ohio Oil Co. is drilling at 3,305 feet in its deep test on the Teague lease in Section 10-23-7.

De Soto

Pollock and others abandoned their test on the Jenkins lease in Section 25-13-13, at 2,815 feet.

Red River

Caldwell and others are drilling at 1,360 feet in No. 1 Welch, Section 7-14-10. The Fortuna Oil Co. is drilling at 2,800 feet in No. 58 Pugh, Section 7-12-10, and set 6-inch casing at 2,697 feet in No. 16 Armistead, Section 24-12-11.

Louisiana Wildcats

Bienville Parish: The Hodge Hunt Lumber Co. has derrick up for No. 3 Hodge in Section 31-15-5, in the southeast corner of the parish. The Standard Oil Co. is drilling at 2,460 feet in No. 1 Leona Scott, Section 21-17-8, 10 miles southwest of Gibsland.

Bossier Parish: Sales & Walker completed No. 3 Bolinger in Section 30-23-12, making 5,000,000 feet of dry gas at 2,690 feet. Perkins and others drilled to 2,600 feet in No. 2 Vance, Section 18-19-13, and are plugging back to test in the shallow sand. The well is 8 miles north of Shreveport.

George O. Baird is down 50 feet in No. 2 Montgomery, Section 18-16-11, in the Elm Grove gas district. Skannell and others have a gas showing at 2,540 feet in No. 1 fee, Section 22-17-12. Sneed and others are drilling at 400 feet in No. 1 Jones, Section 23-18-11, 15 miles east of Shreveport.

La Salle Parish: The Urania Petroleum Co. is drilling at 2,010 feet in No. 2 Urania, Section 20-10-2, 2 miles south of Urania and 20 miles east of Winnfield.

Lincoln Parish: The Four Creek Oil Co. has a flow of fresh water at 790 feet in No. 1 Colvin, Section 27-20-3w, which it is trying to shut off.

Morehouse Parish: The Southern Carbon Co. completed No. 10 Spyker in Section 29-21-5, making 4,000,000 feet of gas at 2,257 feet. No. 11 in Section 17-20-5 is rigging up to drill.

The Consolidated Oil Co. got salt

water at 2,320 feet in No. 1 Oden, Section 28-20-5, and waiting orders. Cronin & McKenzie are drilling plug in 8-inch at 955 feet; Ladel and others are drilling at 1,970 feet in No. 16 fee, Section 21-20-5, and Morris, trustee, is drilling at 2,100 feet in No. 1 Plemmons, Section 20-20-5 and at 1,650 feet in No. 1 White, Section 28-20-5.

Ouachita Parish: The Ouachita Natural Gas Co. completed No. 2 Lieber in Section 5-19-4, making 16,000,000 feet of gas at 2,130 feet.

Wells drilling in this district are the Chester Carbon Co.'s No. 1 Flournoy, Section 22-19-5, at 1,250 feet; Consumers Gas Co.'s No. 2 Richie, Section 8-19-5, at 2,000 feet; Cosmos Carbon Co.'s No. 2 Hancock, Section 20-19-5, at 2,000 feet; Fortuna Oil Co.'s No. 1 Cole, Section 35-20-4, at 2,075 feet; Haynes and others' No. 2 Dixie Lumber Co., Section 54-17-3, at 1,710 feet, and Hosterman and others' No. 1 Collins, Section 31-19-5, at 2,130 feet.

Ladel and others' No. 17 fee, Section 29-20-5, set 8-inch at 940 feet and No. 18, drilling at 975 feet; Magnolia Carbon Co.'s No. 1 fee, Section 18-20-5, drilling at 2,025 feet; Southern Carbon Co.'s No. 24 fee, Section 27-19-5, set 6-inch at 2,225 feet, derrick up for No. 25 and No. 6 Fairbanks, Section 43-20-5, set 12½-inch casing at 180 feet.

The Texas Louisiana Producing Co. is down 50 feet in No. 3 fee, Section 4-19-5; The Texas Co. is drilling at 500 feet in No. 3 Gibbs, Section 29-19-5; and its No. 3 O'Neal, in Section 33-19-4, is blowing 5,000,000 feet of gas at 2,248 feet and will be drilled deeper. The West Virginia Oil & Gas Co. set 8-inch casing at 960 feet in No. 2 West Virginia, Section 4-18-5.

Union Parish

Interest in Union Parish development is centered on the Union Parish Drilling Co.'s well, now standing at 2,155 feet, where 6-inch casing was set. Casing has been bailed dry and drilling will be continued 50 or 100 feet, to the depth where good showings of oil have been obtained in two tests in this territory.

Collins & Woodley are drilling at 2,400 feet in No. 1 Newson, Section 23-23-1e. Davidson & Palmer have a rig up ready to start drilling No. 1 Green, Section 19-23-1e, and Love Brothers are drilling at 2,450 feet in No. 1 Security Trust, Section 12-23-1w. Woodard & Clarke are rigging up to drill No. 1 Clarke in Section 17-23-2e.

The Empire Gas & Fuel Co. is drilling at 2,300 feet in No. 1 Hamilton, Section 30-19-1e, 11 miles south of Farmerville.

In the east end of the parish, the Union Power Co. is drilling at 650 feet in A-5, Union Sawmill, killing fresh water flows at 925 feet in A-6 and at 350 feet in A-8, and set 12½-inch at 170 feet in A-7, in Sections 32 and 21-4e, about 10 miles northwest of the Monroe gas field.

Webster Parish

A light spray of oil in the Merritt well, recently completed by the Oil Field Gas Co. as a 25,000,000-foot gas well at 2,535 feet, has directed the attention of oil operators to the Cotton Valley district, as a possible new pool and promises considerable activity in this territory.

The Oil Field Gas Co. is down 50 feet in a test on the Hope Estate in Section 13-21-10, offsetting the Merritt well on the east. Locations have been made for tests in this vicinity by O'Brien and others, No. 1 Doles in Section 26-21-9, Snyder and others, No. 2 Hodges in Section 15-21-10, and the Triangle Drilling Co., No. 1 Merritt in Section 14-21-10.

Palmer & Blunt set 10-inch casing at 65 feet in No. 1 Anders, Section 6-18-10, 15 miles east of Shreveport and 8 miles west of Minden.

The Ohio Oil Co. is drilling at 850 feet in No. 1 Martin, Section 34-23 10, 9 miles north of Cotton Valley.

Arkansas Wildcats

Wildcatting in southern Arkansas is practically at a standstill, only a few scattered rigs running and with nearly 50 shut down for indefinite periods.

Clark County: The American Drilling Co. is drilling at 550 feet in No. 1 Wilson, Section 15-8-22.

Hempstead County: The Columbus-Hope Oil Co. has set 6-inch casing at 2,080 feet in No. 2 King, Section 25-11-25. Myers and others are drilling at 1,740 feet in No. 1 Nichols, Section 17-11-25. G. W. Simmons, trustee, is drilling at 2,115 feet in No. 1 Adams, Section 36-12-27.

Little River County: Gaines and others, whose well has been shut down for several weeks, is drilling ahead at 1,890 feet in No. 1 Goodwin Timber Co., Section 15-13-29. Johnson and others have resumed drilling in No. 1 Hawkins, Section 10-11-31, and are down 980 feet.

NORTH TEXAS MARKET NEW NAVY STRONGER

FORT WORTH, Tex., Nov. 26.—Following the lead of Group 3, the New Navy gasoline market in North Texas is showing some signs of strength, general quotations being 6¼ to 6½ cents, as compared with 6 cents the previous week. However, buyers are not yet taking hold at the new prices to any considerable extent, although most of the refiners seem to be able to dispose of their daily runs without any accumulation of stocks. Two or three of the larger plants have closed down in this territory and with a number of plants making the higher gravities of gasoline, there is not a great deal of New Navy available.

While the domestic demand for the 64 and 66 gravities of gasoline still remains sluggish, several of the North Texas refiners are sold up on these grades until the middle of December on export orders placed some weeks ago.

Kerosene still remains strong at 4¼ to 4½ cents, with very little obtainable even at these prices. The demand continues good and with the comparatively small quantity of kerosene being manufactured in North Texas, the refiners are naturally taking advantage of the "supply and demand" situation.

Natural gasoline is weaker with most of the plants wondering when the bottom will be reached; prices continuing their downward course, and in spite of concessions in price, little improvement in demand is noted.

The movement of distillate shows a considerable falling off, and as a consequence gas oil, for the first time in some weeks, is registering a change in price, quotations being generally one-eighth to one-quarter lower than previous weeks, and is easily obtainable at two cents, with stocks showing some increase.

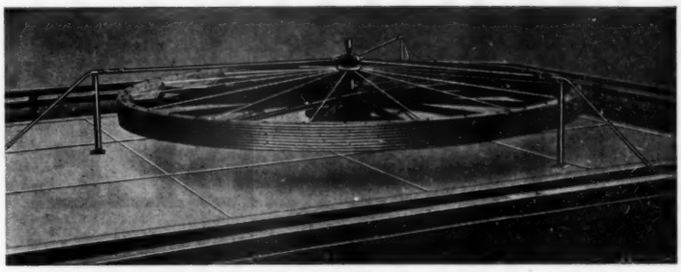
The fuel oil situation is more optimistic than has been apparent for some time. The efforts of the refiners to deplete their stocks of fuel oil has resulted in a considerable improvement in this respect, and while as yet there has been no material increase in price, the general tone of the market is stronger with prospects of better prices in the immediate future, present quotations now being generally 65 to 70 cents, sellers' cars.

MADAGASCAR'S IMPORTS

Petroleum and petroleum products imported into Madagascar during the quarter ended June 30, 1923, amounted to 130 metric tons, valued at 237,240 francs, compared with 442 tons, valued at 716,296 francs in the preceding quarter. This large difference is due merely to the fact that petroleum, gasoline, and lubricating oils are imported in cargo lots, in ships arriving three or four times a year at regular intervals. The imports included 56,727 kilos of kerosene, 41,251 kilos of gasoline, 31,366 kilos of lubricating oils, 589 kilos of paraffin, and 317 kilos of vaseline.

DEATH OF FRANK McCANN

CHATHAM, Ont., Nov. 25.—The death occurred at Owen Sound, Ont., recently of Frank McCann, a former Petrolia driller. He was about 65 years of age, and moved to Owen Sound 16 years ago. Prior to that he had been drilling in Australia and the East.



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Think it over. All parts of Durnell Underpull are interchangeable from 12 to 24-foot powers. We give you any size powers built to stand any load.

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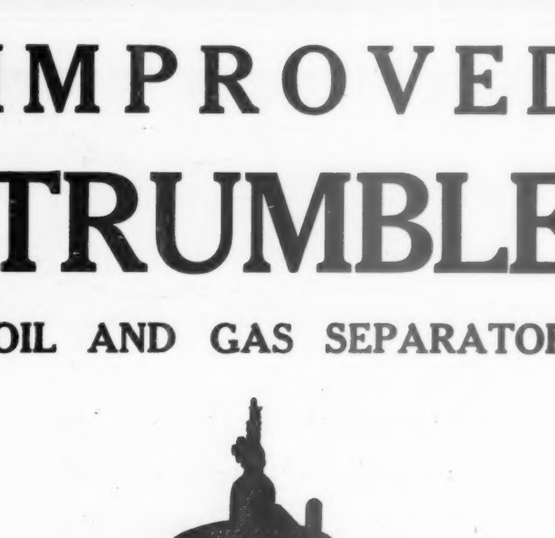

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WYOMING FIELDS

(Continued from Page 40)

Black Mountain well of the Utah Oil & Refining Co., is active after being shut down for some time. This well was started drilling last week through the Utah's strike of black oil on the Black Mountain Dome.

The Wyoming oil market has received its first advance since the recent drop, Osage and Lance Creek crudes were advanced 10 cents per barrel and this is believed to presage other advances on other crudes shortly.

The Ohio and Midwest companies have entered into a contract with the Warm Springs County authorities to build a bridge across Cottonwood Creek in that county on the road from Thermopolis to Grass Creek. The bridge is to cost $8,000 and will have a span of 225 feet. It will eliminate a ford that at high water shuts off all travel to Thermopolis.

Gasser at Thompson, Utah

A report from Thompson, Utah, states that the well of the Crescent Eagle Oil Co., drilling there found a gas flow at 2,330 feet and the hole has bridged. This is a wildcat in Grand County and this gas is the first showing reported.

Wyoming Petroleum Club

The Wyoming Petroleum Club met at the county court house at Casper, and formed a definite organization. There were present men from the geological fraternity, rig builders and drillers, lease men and pumpers, men from the Bureau of Mines and all the larger oil firms, and from the different refining plants.

Former Governor Brooks opened the meeting outlining the idea that by these get-together meetings twice a month and open discussion of the problems met in actual practice, it would be possible to solve some of the vexatious obstacles Wyoming operators have to contend with.

Governor Brooks was followed by Cal Smith, formerly with the Midwest Refining Co. and now with the White Eagle Refining Co., who outlined the needs of a refinery site and the practical work in putting up a large refinery.

The club started with a membership of 100 oil men and many more unable to be present have signified their intention of coming at the next meeting at Casper. Meetings will be held on the first and last Tuesdays of each month.

TEXAS PRODUCTION

AUSTIN, Tex., Nov. 29.—Ninety-eight million barrels of crude petroleum was produced in Texas during the first 10 months of 1923—more than the entire production of the previous record year. With two months more to go, indications are, according to figures compiled by the oil and gas division of the State Railroad Commission, that the total production for this year in Texas fields, despite low prices and reported attempts at production curtailment, and admitted slowing up of wildcatting in many sections—will exceed 125,000,000 barrels.

KANSAS REFINERS WILL MEET

Kansas refiners have no State association, but about a score of them meet quite informally each month at some convenient city to discuss business and to exchange ideas. Next Tuesday they will be guests of F. A. Pielsticker on behalf of the Skelly Oil Co., and will meet in El Dorado. At this meeting the report of the committee on freight rates, J. H. Miller, chairman, and the committee on crude oil supply, A. L. Derby, chairman, will be made.

BUYS LAWTON COMPANY

OKLAHOMA CITY, Okla., Nov. 26.—The Bolene Refining Co. of Enid, has purchased the marketing equipment of the Lawton Refining Co. at Lawton, consisting of tanks, trucks, a filling station, etc. The sale was made recently by J. R. Travis, receiver of the Lawton company.

POWELL PRODUCTION ON TUESDAY 211,000 BBLS.

CORSICANA, Texas, Nov. 28.—The estimated production of Powell on Tuesday, November 27 was 211,000 bbls. a decline of over 143,000 bbls. from the peak prouction registered on November 13. This is an average decline in two weeks of over 10,000 bbls. per day. The average production per well in the same period fell off from 749 bbls. per day to 485 per day.

OSAGE OIL PIONEER PASSES

William Augustus Springer, 63 years old, pioneer oil man of Tulsa, died Monday, following an operation for appendicitis. Mr. Springer was one of the men responsible for the development of Osage County, purchasing in 1914, with Dr. S. G. Kennedy, a lease near Hominy which yielded a gusher that producer 10,000 barrels the first day. Mr. Springer reaped handsomely from an interest of one-fourth in this lease upon its sale in 1916 for $12,500,000. He then retired from the oil business.

Mr. Springer worked in every branch of the oil industry, commencing at 14 as a pumper for the Wiggins & Curtis Co. in Pennsylvania. After five year he went to Bedford where he was put in charge of a small lease operated by the Foster Oil Co., which sent him to West Virginia with supervision over several strings of tools. Another oil boom recalled him to Pennsylvania. He entered the Service of Guffey & Galey in the late eighties, until that firm disposed of its holdings in 1907. He came to the Indian Territory in 1902, as the first representative of his firm.

Survivors are the widow, the son, Dr. M. P .Springer, and two daughters, Mrs. Robert Bates, of Norman, Okla., and Mrs. M. E. Gaskill, 208 Springer Apartments, Tulsa, Okla.

NAVAJO WELL HOLDING UP

OKLAHOMA CITY, Okla., Nov. 26.—A message to J. C. Crump from Farmington, N. M., reports that the No. 5 well of the Midwest Refining Co., on the Hogback structure of the Navajo Reservation, is making about 1,500 barrels daily of high grade oil from the 750-foot sand, from which oil is being produced in other Midwest wells. This well is about 1,000 feet from the company's No. 3. The Midwest has spudded another test in San Miguel County, on what is known as the V. K. Jones structure 1½ miles north of the Guadalupe County line. The location is in Section 25-12-23. The company sent heavy drilling equipment there from Wyoming. It holds leases on practically all the area covered by the structure, the geology of which is reported to be exceptionally favorable.

KANSAS WILDCAT HAS OIL

Kansas operators are excited over the showing of three wells. The M. M. Valerious Oil Co.'s wildcat in Russell County, SE cor. SW, Section 8-12-15w, about 50 miles from the nearest semblance of production, had 2 300 feet of 40 gravity oil in the hole at a depth of 2,965 feet. Waite Phillips and the Independent Oil & Gas Co.'s No. 1 Johnson, NW cor. SE, Section 20-33-3e, in Cowley County, was still flowing about 225 bbls., and the Champlin Refining Co.'s No. 1 Hitchcock, NW cor. NE, Section 16-30-1w, in Sumner County, was making 10 bbls. of 43 gravity oil naturally, and had not been shot.

ROYAL DUTCH QUITS ARGENTINE

By C. E. Kern

WASHINGTON, D. C., Nov. 27.—A cablegram received here today states that the Royal Dutch Oil Co. has suspended all operations in the Argentine, following the example of the Anglo-Persion Oil Co. some time ago. It is understood that the large expenditure and small returns from the adventure in the oil fields there is the main cause of this action.

PETROLEUM ENGINEERS NECESSARY TO INDUSTRY

(Continued from Page 36)

feared it. The practice might curtail possible profits.

This oversight has cost millions of dollars, and it will take a few years yet to actually standardize oil field material.

And now, after this preamble, is it not serious that we have to admit the mechanical end of the industry, that of oil development, is among all other industries the furtherest in arrears collectively, as to actual improvement of methods?

Another line of argument, a very large percentage of actual field operators of all degrees of efficiency, for reasons known only to themselves, apparently are irrevocably prejudiced against the use of improved facilities, principally steel equipment, in the field, for any purpose whatsoever,—except as steel nails for timber rig building, pipe, wrenches, drill stems, jars, drilling bits, hammers, all dimensions and weights of casing, drill pipe, etc. The same old type of engine, though confessed as highly efficient for the purpose, is still in use; the only evident improvement in perhaps 50 years being an increased diameter of cylinder and length of stroke,—these features necessary for increased power requirements.

But there is the same old type of boiler, though the manufacturers of the latter will be compelled by State laws in the near future to design and build same in accordance with the standard specifications of the A. S. M. E. Boiler Code, to preserve the life of mankind.

Stick to Old Methods

Now, the field man knows exactly what to do with nails, hammers, sledges, bars, and the like, but if he meets up with anything of a constructive nature other than timber,—anything that may cause him any delay, his tendency will be to follow the old method of procedure.

The executive, his efficiency is doubtless influenced by the necessity for haste in required new installations. For instance, a location is made, in which case the office force is instructed to call up the nearest lumber yard and order a timber rig pattern hauled to the location. In some instances the weight of this timber may be 50 tons, and a steel outfit for the same location and purpose would not be over 20 tons in weight, therefore this indicates a transportation loss.

But the age of improved facilities is here, and will protect and promote its own advancement by means of a higher type of education for both executives and field authorities. The necessity for timber conservation is a prime factor, and economy must follow for another reason, that, of the vast total of funds that are lost in exploitation of new fields, a large comparative amount disappears as working capital because of the loss not only of timber equipment (which is not portable) but the cost of dry holes.

Further consideration of the preceding statement as to unavoidable losses, we must admit that this business has been the means of propagating and developing more millionaires than any other industry, and a vast proportion of the latter are still with us. For this we are grateful, when the rest of us consider the speed at which we live and move, and also because the greatest benefactor of mankind the world has ever known is still carrying on, and it is evident that economic principles and the Golden Rule were the base of his methods.

Genius Offers New Devices

The genius of the entire world always stands ready with a thousand and one devices, and is the prospector and producer in fear of delay, or has he an inherent desire to get rich, as others, overnight, or what, we don't know, neither can we surmise,—but we can infer that, in substance, a few of the matters he might have considered he failed even to attempt.

As to chemists and geologists, the former were known as necessary very early in the industrial development, and later the geologists evidently proved of value, both being mentally equipped along scientific lines. Considering the mechanical features connected with oil and gas production this is necessarily a specialized industry, but heretofore there has not developed enough interest on the part of field executives to make is necessary for even local colleges to interest their organizations as to the actual necessity for "PETROLEUM ENGINEERS."

There can be no criticism as to the development of the by-products of petroleum, because gasoline made the navigation of the air possible, resulting in strategy that assisted in winning the war, and there is evidence that the industry as a whole is interested in the age of steel and to accomplish this with a greater degree of speed it may be taken as a fact that petroleum engineers, (mechanical) will prove of material assistance.

CORE DRILLING IN CALIFORNIA FIELDS

(Continued from Page 36)

Cores taken from the edge of an oil sand sometimes show the upper part saturated with oil while the lower part is barren, and often there is no shale parting between the two. The barren portion is so devoid of oil that even the delicate ether test gives no reaction. We have noticed that the oil sand portion of such a core acts in a peculiar manner on being tested with ether. The sand tends to form a flocculent, muddy, slow settling sediment, in sharp contrast to the rapid settlement of sand from the test of an oil sand containing no water. It appears evident that oil and water can and do exist in intimate mixture in the same sand stratum.

It is sometimes desired to orient a core sample, as in the case of coring for buried structure. Two methods are applicable in the case of shallow holes, namely, the stratameter and the clamp method, but neither is advised for deep holes for reasons peculiar to each method.

The stratameter is an invention of H. W. Smith of Holland, and consists of a bronze body enclosing a compass, the needle of which is released by pressure on the drill pipe, and clamped by powerful springs when the drill pipe is raised. This instrument is placed immediately above the core drill, and although rather delicate, functions fairly well in shallow holes, but its bulk and lack of strength to resist torsional stress make its use in deep holes too dangerous to experiment with.

The clamp method is simpler and safer and probably just as efficient in shallow holes. A clamp is placed on the drill pipe just above the rotary table and lined in by transit located 100 or more feet distant. The drill pipe is raised the customary number of joints and twisted into line at the direction of the transitman, and another clamp is placed on the pipe just above the rotary table, in line with the first one. The top clamp is removed and the operation repeated. This method is effective where it is reasonably certain the drill pipe hangs free in the hole, but such a condition probably does not exist in deep holes; we have no satisfactory method of orienting cores in deep drilling.

*Presented before the Southern California Section A. I. M. E.

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Why bother with the trouble and expense of sand making its way into the working parts of your pumps, when with this time-tested Jarecki Pump with Sand Trap you get, in addition to efficient pumping service, real sand insurance?

One moment's study of the drawing reproduced above will demonstrate the triple protection that the Jarecki Pump gives against the interference of sand with the proper working of valves and cups.

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Republic Pipe Conveys Texaco Crude

The Texas Co., marketers of Texaco products are now completing a one hundred-mile line of Republic 10" pipe. This line has as its two terminals Louann, Ark. and Ardis, La. The above view was made as the line was being laid through a dense woods.

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OKLAHOMA-KANSAS PRODUCTION BY POOLS IN OCTOBER SHOWS LESS

Oklahoma produced 12,961,782 bbls. in the month of October, a daily average of 418,122 bbls. The production for September was 12,812,220 bbls. or 427,074 bbls.; for August, 14,049,076 bbls. or 453,196 bbls. It is necessary to go back to April, 1922, to find a month in which the daily average production was less than in the month of October, 1923.

The Burbank Field declined in production from an average of 96,750 bbls. in September to 90,382 bbls. in October. Tonkawa fell off from 57,620 bbls. a day to 51,980 bbls. These were the most pronounced decreases. The new Wewoka Pool in Seminole County increased its average daily output from 12,250 bbls. to 14,441 bbls. Owing to the fact that some of the pipe line companies were more liberal in their proration of runs than they had been the month before, a number of the old pools showed a little increase in production.

The average daily production for the various counties for September is given so that comparisons may be made: Washington, September 7,098 bbls., October 7,086 bbls.; Nowata and Rogers, September 6,515 bbls., October 6,604 bbls.; Osage (including eastern Kay), September 120,147 bbls., October 116,213 bbls.; Tulsa, September 9,533 bbls., October 9,533 bbls.; Okmulgee, September 19,696 bbls., October 20,259 bbls.; Muskogee and Wagoner, September 1,600 bbls., October 1,511 bbls.; Okfuskee, Seminole and Hughes, September 22,489 bbls., October 22,828 bbls.; Creek, September 88,051 bbls.; October 84,115 bbls.; Pawnee, September 7,513 bbls.; October 7,975 bbls.; Payne, September 7,405 bbls., October 7,844 bbls.; Kay-Noble, September 61,784 bbls., October 56,403 bbls.; Garfield, September 5,949 bbls., October 5,753 bbls.; Carter, September 46,378 bbls., October 47,775 bbls.; Stephens-Cotton, September 13,291 bbls., October 14,907 bbls.; Caddo, September 2,130 bbls., October 2,118 bbls.; Garvin, September 5,650 bbls., October 5,857 bbls.; Beckham, September 770 bbls., October 899 bbls.; Pontotoc, September 445 bbls., October 442 bbls.

Few of the Oklahoma fields are producing up to their potentiality nor will they until the stimulus of a general refinery demand and accompanying higher crude prices is given operators.

Kansas shows a little improvement in October over September. The Prairie Oil & Gas Co. bought more crude in October, and the fields of the State easily provided it. Greenwood continued its steady increase in output. It produced an average of 18,224 bbls. in September and 21,527 bbls. in October. Butler County in September produced 34,949 bbls., but fell off in October to 32,927 bbls., while Marion County, which in September showed an average production of 8,123 bbls., declined to 7,760 bbls. in October. The combined production of the other counties showed a little decrease, the September daily average having been 13,175 bbls. and that for October 13,152 bbls. The total for the month in all fields of the State, 75,366 bbls., was an increase of 895 bbls. over the average for September.

OKLAHOMA

County—		
Washington	7,086	7,086
Nowata-Rogers	6,604	6,604
Osage-Kay—		
Burbank	90,382	
Osage, outside of Burbank	25,831	116,213
Tulsa—		
Bird Creek, Owasso, etc.	4,703	
Red Fork, Sand Springs, Turkey Mountain, etc.	2,004	
Bixby, Leonard and Jenks	2,248	
Broken Arrow	578	9,533
Okmulgee—		
Mounds, Beggs, Hamilton Switch and Youngstown	12,088	
Bald Hill	2,630	
Okmulgee and Morris	2,442	
Tiger Flats, Henryetta and Schulter	3,099	20,259
Muskogee and Wagoner	1,511	1,511
Okfuskee, Hughes and Seminole—		
Wewoka	14,441	
Deaner, Lyons, Okemah, Wetumka, Miscellaneous	8,387	22,828
Creek—		
Cushing and Shamrock	24,120	
Glen, Sapulpa and Kiefer	9,918	
Bristow, Kelleyville and Depew	44,017	
Eastern Bristow	6,060	84,115
Pawnee—		
Cleveland and Keystone	3,780	
Jennings	4,195	7,975
Payne—		
Yale, Quay and Ingalls	5,819	
March Pool (N. Cushing)	2,025	7,844
Kay and Noble—		
Blackwell	2,348	
Mervine	660	
Ponca City	884	
Tonkawa	51,980	
Billings	531	56,403
Garfield—		
Garber	5,753	5,753
Carter—		
Healdton	20,639	
Hewitt	17,702	
Milroy-Fox	2,410	
Brock	310	
Graham	6,714	47,775
Stephens-Cotton—		
Loco	2,404	
Kilgore	170	
Comanche	816	
Duncan	10,247	
Walters	1,270	14,907
Caddo—		
Cement	2,118	2,118
Garvin—		
Robberson	5,857	5,857
Beckham—		
Sayre	899	899
Pontotoc—		
Allen	442	442
Total Oklahoma		418,122

KANSAS

County—		
Marion—		
Florence	3,219	
Peabody	3,402	
Covert-Sellers	1,139	7,760
Butler—		
Elbing	4,942	
Potwin	909	
Cameron-Robinson	790	
Wilson-Dunkle	2,611	
Towanda	3,527	
El Dorado	6,433	
Fox-Bush	5,096	
Nuttle-Koogler	1,473	
Sluss	560	
Blankenship	1,402	
North Augusta	1,245	
South Augusta	1,901	
Smock	295	
Douglas	192	
Leon-Weaver	1,551	32,927
Greenwood-Woodson—		
Virgil	6,816	
Seelev	6,880	
Thrall-Burkett	4,511	
Sallyards	1,843	
Paulhamus	870	
Teeter	503	
Miscellaneous	104	21,527
Other Counties—		
Cowley	2,059	
Chautauqua	2,762	
Elk	645	
Wilson	289	
Montgomery	1,997	
Allen	1,710	
Neosho	1,000	
Lyon	38	
Miami	610	
Franklin	616	
Bourbon	125	
Linn	310	
Anderson	937	
Labette	54	13,152
Total Kansas		75,366
Total Okla. and Kansas		494,088

OKLAHOMA

Total production in Oct., 1923	12,961,782
Total production in Sept., 1923	12,812,220
Increase in October	149,562
Total production in Oct., 1922	13,222,151
Decrease in Oct., 1923	260,369
Average daily production in Sept., 1923	427,074
Decrease in October	8,952
Average daily production in Oct., 1922	426,521
Decrease in Oct., 1923, from Oct., 1922	8,399

KANSAS

Total production in Oct., 1923	2,335,346
Total production in Sept., 1923	2,234,130
Increase in October	101,216
Total production in Oct., 1922	2,826,611
Decrease in Oct., 1923, from Oct., 1922	491,265
Average daily production in Sept., 1923	74,471
Increase in October	895
Average daily production in Oct., 1922	91,131
Decrease in daily average production in Oct., 1923, compared with Oct., 1922	16,815

SHELL SOVIET OIL DELIVERIES

Purchases of Soviet kerosene by the Royal Dutch-Shell group, totals 71,344 tons on a contract for 175,000 tons. Delivery has been principally in Egypt and India. None of the kerosene has been marketed in Great Britain.

REPORT OF WESTERN REFINERS FOR WEEK ENDING NOVEMBER 17

The report of the Western Petroleum Refiners Association for the week ending November 17, indicates little change in the refinery operations of Mid-Continent refiners. The report for the week covers the operations of 122 refiners. There are only 125 to 130 plants actually operating in the Mid-Continent area at the present time. The report for the week shows that slightly more crude was run to the stills, this being largely offset by a small decrease in the quantity of semi-refined oils charged to the stills. There was an increase in output of gasoline, kerosene, gas and fuel oils on the part of reporting refineries. Stocks of crude were decreased slightly and there was an increase in the amount of semi-refined oils. Gasoline stocks were reduced while there was an increase in stocks of kerosene and gas and fuel oils.

The following tables cover the principal features of the week's report:

SUMMARY OF REPORTS OF THE SAME COMPANIES FOR WEEKS ENDING NOVEMBER 10 AND 17

(118 Refineries With a Daily Still Capacity of 442,350 Barrels)

	Nov. 10	Nov. 17	Change
Crude run to stills, bbls.	1,457.468	1,531,576	74,108 Inc.
Semi-refined oils taken from stocks and run to stills, bbls.	580,796	504,132	76,664 Dec.
Total oils consumed by stills, bbls.	2,038,264	2,035,708	2,556 Oec.
Output of finished products:			
Gasoline, gals.	20,645,969	21,757,670	1,111,701 Inc.
Kerosene, gals.	6,317,093	7,367 300	1,050,207 Inc.
Gas and fuel oil, gals.	32,304,261	34,831,051	2,526,790 Inc.
Stocks on hand at close of week:			
Crude oil, bbls.	5 573,972	5,535,003	38,969 Dec.
Semi-refined held for further refining, bbls.	1,276,456	1,341,522	65,066 Inc.
Gasoline, gals.	100,194,589	96,796,804	3,397,785 Dec.
Kerosene, gals.	*10,427,410	*11,016,506	*589 096 Inc.
Gas and fuel ....dollars	1,915,251 3,283,331	21,663,495	29,254,903

*Texas excluded due to investigation of reports.

CONSOLIDATED STATEMENT COVERING ALL REPORTING REFINERIES FOR WEEK ENDING 7 A. M., NOVEMBER 17, 1923

	Kansas	Oklahoma	Texas	La-Ark.	Total
Number of refineries reporting	23	54	35	10	122
Daily capacity of stills, bbls.	80,600	249,800	121,850	18,100	470,350
Materials for stills, bbls.:					
Crude oil, Item A	297,936	756,326	517,676	40,144	1,612,082
Other oils (see note), Item B	18,042	320,704	164,015	1,371	504,132
Total	315 978	1,077,030	681,691	41,515	2,116,214
Output of finished products, gals.:					
Gasoline, Item C	4,439,767	12,434,332	5,859,337	362,628	23,096,064
Kerosene, Item D	1,410,551	3,814 934	2,321,786	172,076	7,719,347
Gas and fuel oil, Item E	6,356,741	17,011,473	12,141,070	1,838,201	37,347,485
Stocks on hand at close of week:					
Materials for stills, bbls.:					
Crude oil, Item J	573,143	4,394 358	686,949	124,684	5,779,134
Other oils (see note), Item K	29,273	996,567	313,364	2,906	1,342,110
Finished products, gals.:					
Gasoline, Item L	6,645,380	63,921,005	26,608,659	1,573 046	98,748,090
Kerosene, Item M	2,123,243	8,670,902	7,019,034	427,456	18,240,635
Gas and fuel oil, Item N	10.519,696	53,052,877	46,974,348	1,945,726	112,492,647

Note—Other oils include all oils other than crude which are either purchased or withdrawn from stocks and run to stills during the week. The total of Items A and B is, therefore, the net quantity of materials consumed by the reporting refineries in producing the quantities of products shown as the result of the operation of the refineries during the week. Item K includes all stocks of oils, other than crude, held for further refining.

OCTOBER IMPORTS AND EXPORTS OF CRUDE AND REFINED PRODUCTS

The Department of Commerce reports domestic exports of petroleum and refined products and imports for October and the 10 months of 1923 as follows:

Petroleum, crude....gallons	29,990,195	54 262,248	337,269,276	572,364,442
Petroleum, crude....dollars	1,196,708	1,615,521	15,363,632	19,206,524
Total refined petroleum....gallons	212,126,699	309,411,813	2,062,338,471	2.704,824,004
Total refined petroleum....dollars	25,395,741	26,208,701	264,248,833	279,308,940
Gasoline, naphtha and other light products....gallons	42,757,013	85,241.056	491,022,199	720,004,887
Gasoline, naphtha and other light products....dollars	9,258,888	10,980,734	108,961,213	121,408,609
Oils, illuminating....gallons	84,061,345	79,614,856	740,327,876	703,113 367
Illuminating....dollars	7,388,320	6,520,067	68,939,642	64,628,600
Gas and fuel....gallons	58,975,070	119 238,900	551,157,206	988,353,212
Gas and fuel....dollars	1,915,251	3,283,331	21,663,495	2,9254,903
Lubricating....gallons	26,333,271	25,317,001	279,831,190	293,352,538
Lubricating....dollars	6 833,282	5,424,569	64,684,483	64,016,828
Paraffin wax....pounds	26,360,564	30,236,228	233,821,393	270,839,596
Paraffin wax....dollars	854,665	1,045 398	7,659,149	9,363,782

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COPY must be in our office Friday prior to date of issue. Average 6 words to the line. Cash in advance

LEASES—PRODUCTION

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

OWN FOUR 160-acre tracts, alternate sections, central Oklahoma. Made investment after careful study. Activity in counties on three sides. Will sell only in forties, retaining half entire. Several tests starting. Offered at $4 per acre, immediate sale. Address John J. Dillon, P. O. Box 194, Denver, Colo.

I HAVE wildcat acreage for sale in vicinity of well located by the same geologist who discovered the Sayre oil field and recommended by him to be as safe an investment as the Sayre Field. I can sell for $2 per acre and up. Dr. W. R. German, Canadian, Tex.

$1.00 PER ACRE for 1,000 or 5,000 acres in the Panhandle of Texas on surveyed structure. Well drilling to prove this territory. No rental due till 1926. A snap for someone. If interested, write and will forward printed geologist's report and map. 300 Alworth Bldg., Duluth, Minn.

FREE ON REQUEST—Map of Allen County, Kentucky, showing pools. Greatest shallow oil field in the world. Production on pipe line and leases with wells equipped and unequipped, near pipe line. Splendid opportunity for oil companies or syndicating. Brokers and promoters protected. Lock Box 4, Scottsville, Ky.

I HAVE 14,000-acre block to give for two test wells. I will furnish maps and report. J. H. Cumley, care The Oil and Gas Journal, Tulsa, Okla.

TO EXCHANGE, or as first payment, 80-acre lease in proven Kansas Field for Mexican acreage. Value, $2,500. What have you? Crescent Oil & Gas Co., 4448 Troost Ave., Kansas City, Mo.

OWN SIXTY and forty-acre tracts, Archer County, Texas, southeast Archer City. Will sell half $6 per acre, immediate sale. Owner, P. O. Box 194, Denver, Colo.

FOR SALE OR LEASE, several hundred acres near Powell discovery well, Corsicana Field; perfect title; deal with owner. Investments, 613 Mercantile Bank Bldg., Dallas, Tex.

EIGHTY ACRES prairie land on east side of dome, and on fault 6 miles from Damon Mound, Tex., oil field. One hundred dollars per acre, or $65 per acre for surface and seven-eighths of oil. Hiland P. Lockwood, Rice Hotel, Houston, Tex.

OIL PROPERTIES WANTED

Have immediate purchaser for vast properties composed of complete and well diversified oil interests. Holdings should also contain defined reserves for development in addition to extensive production throughout the principal fields.

Have immediate purchaser for large property or group of properties. Holdings should contain acreage for drilling in addition to large production.

Also have purchasers for either large or small properties, should contain acreage for drilling in addition to production.

Negotiations confidential. Karl F. Divener, 950 W. North Ave., Pittsburgh, Pa.

I AM STARTING well on a block of 2,180 acres, located on a good anticline in Oklahoma, that has had five producing wells already drilled on it. Am selling undivided interests in the whole acreage with one well completed. A 1/100 undivided interest, $200. Other interests same proportion. To interested parties will send complete geological report, with structural map, cross sections and full details on receipt of $2, which will be refunded to all purchasers. This is a strictly business deal, not a wildcat promotion; and you may put your money in the bank in escrow until well is completed. Address J. C. Stull, Hotel Brady, Tulsa, Okla.

LEASES—PRODUCTION

POTTAWATOMIE COUNTY leases and royalties. B. H. Rowlett, Tecumseh, Okla.

160 ACRES, Panhandle, Texas, near Oklahoma border activity. Sell two forties, $3 per acre, if quick sale. Owner, P. O. Box 194, Denver, Colo.

WEWOKA, OKLAHOMA'S newest oil field, leases and royalties in Seminole and Pottawatomie Counties. Royalty in 33-8-8. W. R. Turner, 2123 Warren Ave., Chicago, Ill.

Answer the 1924 Red Cross Roll Call.

SPLENDID oil prospect of 185 acres, touching an undrilled dome on the same fault as Humble, which produced 90,000,000 barrels of oil. Rich river-bottom land. $60 per acre, fee. Hiland P. Lockwood, Rice Hotel, Houston, Texas.

FOR OIL and gas leases on school land in the famous San Juan Basin, New Mexico, priced right, address P. O. Box 366, Farmington, N. M.

FOR SALE—320 acres, Section 33, north of range 1, I W. Township 33, Toole County, Montana, in oil district. C. Gooding, 14 S. 7th St., Kansas City, Kan.

Answer the 1924 Red Cross Roll Call.

OIL LEASES of any size from 20 acres and up in the vicinity of two wells that are being drilled near Chandler, Tex. Also leases in Smith County, Texas. Buy now while prices are reasonable on leases in East Texas and don't wait until they strike oil here and then have regrets. R. R. Yoe, P. O. Box No. 291, Tyler, Tex.

6,000 ACRES for drilling contract; extreme south end Lonoke County, Arkansas. R. H. Hardin, England, Ark.

82½ ACRES, Baylor County, Texas, adjoins large acreage held by The Texas Co. Will sell half $3 per acre if taken soon. Owner, P. O. Box 194, Denver, Colo.

SACRIFICE 25 ACRES of as fine irrigated land to be had in the Rio Grande Valley; will raise any kind of citrus fruit; all in cultivation; has small house and other outbuildings. This winter's crop should pay for the place, $7,500; terms to suit. Corey, 401 Ninth St., Brownsville, Tex.

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In so doing you will be helping a most worthy cause and spreading happiness.

WEWOKA AND SEMINOLE County leases and royalties for sale. Close to production and in territory which is bound to get big play. Write Box 804, care The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Leases and royalties in Arkansas oil belt, Ouachita, Columbia and Lafayette Counties. Address Box 562, Magnolia, Ark.

PRODUCERS. Refiners and others interested can secure protection acreage on one of the best anticlines in Montana. Recommended by U. S. G. S. and leading private geologists. Test well now drilling. Walter F. Brittan, Poplar, Mont.

WILL TRADE oil leases near drilling well in Childress County, Texas, on structure for similar leases or royalties near other drilling wildcat wells. Our well is fully financed and contracted to reliable people. No rentals till 1926. 300 Alworth Bldg., Duluth, Minn.

FOR SALE—1,000 acres, surrounded by three large gas wells that measure 1,600,000 feet each. This acreage is taken on very cheap rental. Sure shot for lots of gas. More acreage can be gotten. These large wells are within 50 yards of this boundary. Write R. T. Gaddie, Bengal, Taylor County, Kentucky.

LEASES—PRODUCTION

NEED TAX MONEY—New five-year leases, McClain County, Oklahoma, direct land owner, 50c bonus. Box 458, Purcell, Okla.

TEXAS OIL LEASES in eight active counties along the Balcones Fault, in any size tracts you wish. All my leases are purchased direct from the owners; perfect titles; write for price list. Frank Mashek, 2317 Crawford St., Houston, Texas.

PRODUCTION ROYALTIES wanted. Preferably only partly drilled, for cash. Give price, location, acreage, number of wells, depth and thickness of sand, approximate drilling date, rough plat of locations and production by months since January 1, 1923. Upon detailed information as above, buyer, if interested, will arrange personal conference in Tulsa. Address Optimist, The Oil and Gas Journal, Tulsa, Okla.

PRODUCTION

If you have production to sell send full particulars to

BENJAMIN F. GRAHAM
10 North Clark St.
Chicago, Ill.

A FORTUNE IN WYOMING OIL

I now own and control 10,000 acres of oil lands in the State of Wyoming, situated in six different structures, including the famous Salt Creek and Teapot Domes, and will sell a one-half undivided interest to the right party. Do not inquire unless you have some cash and are ready to invest at big odds. K. S. Albert, U. S. Commissioner, 613 East Thirteenth, Casper, Wyo.

WILL GIVE 12,000 acres for a test well in promising Arkansas territory. Address G. Lucas, 617 Edwards St., Shreveport, La.

FOR SALE—EQUIPMENT

FOR SALE—23 Star Drilling Machines in good condition and a complete set of tools; will sell very reasonable for cash. J. H. Brocksmith, 1856 Menard St., St. Louis, Mo.

FOR SALE—Used casing and line pipe in A-1 condition, all sizes. Write or wire for prices. Cisco Pipe & Supply Co., Cisco, Tex.

FOR SALE—Seven miles 5⅝-inch casing now in ground using as gas line. Gas going through the line now. Will sell in ground for 25 cents foot f.o.b. Cars 35 cents foot. If interested come and inspect right here. C. M. Sarber, Chanute, Kans.

WE HAVE for sale at $3.50 each, about 100 copies of Hilgard's Report on the Geology of Mississippi (1860). These reports are rare, but are indispensable to geologists who expect to work in Mississippi. Address E. N. Lowe, Director, Geological Survey, Jackson, Miss.

FOR SALE, delivered, at Mohrland, Utah, 600 feet of 12-inch and 600 feet of 10-inch casing; also 400 feet of 6⅝-inch at Myton, Utah. Address Box 700, care The Oil and Gas Journal, Tulsa, Okla.

DON'T BUY a light plant until you see Farmelectric, the Ford Parts Plant, and get prices and terms. Chas. S. Brown, state distributor, 21 N. Dewey, Oklahoma City, Okla.

HAVE COMPLETE string casing 15½ to 6-inch would furnish on wildcat. E. E. Aldridge, 1002 Burkburnett Bldg., Fort Worth, Tex.

THE WESTERMAN STUFFING Box does not pack with rubber rings and will give long, continuous service without attention. If your supply dealer hasn't them, send your order direct to The Dragon Mfg. Co., Marietta, Ohio.

FOR SALE—EQUIPMENT

FOR SALE—Gurley light mountain transit with Stadia wires and vertical arc. Good condition. P. O. Box 1048, Ponca City, Okla.

2,000 FEET used 6-inch National upset drive pipe for drilling on line pipe located 10 miles east of Ryan, Okla. Will greatly sacrifice. R. O. Stuart, 219 Fidelity National Bank Bldg., Oklahoma City, Okla.

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Write or wire for quotation.
SHEETS—All gauges and sizes; galvanized, blue-enamel. Also corrugated and composition roofing. Plates to ¼-inch.
STEEL MFG. & WAREHOUSE CO.
1447 Genesee St. Kansas City, Mo.

Answer the 1924 Red Cross Roll Call.

FOR SALE—One string of standard tools, from 18-inch to 5⅛; 50 h. p. boiler; 12x12 Ajax engine, used on 3 wells. Also one No. 28 Star machine, with calf wheel; 25 h. p. Mounted Oil Field Boiler; tools from 10-inch to 6⅝, with machine. For further information write H. L. DeWoody, 817 Hargrove St., Ardmore, Okla. Telephone 1648. Will sell at a bargain.

FOR SALE — A 28 Star, fully equipped, near Sedan, Kans. Will sell cheap to close a copartnership. W. G. Kountz, Webb City, Mo.

USED MACHINERY of all kinds; boilers, steam and gas engines, compressors, boiler tubes, pipe and fittings. Ask for stock sheet. Landreth Machinery Co., Joplin, Mo.

FOR SALE—All sizes used casing and line pipe. Wire or write for prices. Breckenridge Salvage & Supply Co., Breckenridge, Tex.

FOR SALE—De Laval separator, good condition, less than half price. Bryte-Nelson Refining Co., 1171 Arcade, St. Louis, Mo.

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The Oil and Gas Journal contains statistics and unlimited information that is most valuable to the oil and gas man. Calls for back numbers are so numerous we are unable at all times to supply the demand—in fact, we can furnish very few back numbers. The issues missing from our files may be the ones you want. To make it possible for you, at all times, to refer to special articles or other information you desire, we have secured binders specially designed and durable and attractive in appearance that hold 26 numbers, or six months' issues. They are for sale at actual cost to us.

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FOR SALE—PETS

NEWFOUNDLAND puppies. Registerable. Write for prices. Joel Birkey, Fisher, Ill.

NEWFOUNDLAND — At stud, Togo, A., K. C. 373051; also thoroughbred Newfoundland puppies. Box 62, Fort Riley, Kans.

WANTED

WANTED—Someone to help finance a well on proven acreage on structure, high grade oil. Will not consider any promoting. Box 751, Fort Worth, Tex.

WANTED — Brokers or promoters. Awarded 6,000 acres by commissioner New Mexico on structure. Government shows seepage. Drilling well excellent showing. Sell 4,800 acres at $15 acre. This also buys 16 units of 24-unit company. Well set up on 640 solid, including 320 additional; excellent geology; good commission. Kansas and Oklahoma Drilling and Leasing Co., Box 824, Wichita, Kans.

WANTED—Acreage on good geology for drilling contract. Address Box 901, care The Oil and Gas Journal, Tulsa, Okla.

F. W. MERRICK, Ardmore, Okla., desires the address of one Mr. Campbell, who worked for the Paraffine Oil Co. at Wirt, Okla., in the year 1914. Matter of interest to Mr. Campbell. I think Mr. Campbell went to Walters, Okla., after leaving the Healdton Field.

PERSONAL NOTICE—Anyone knowing the whereabouts of Harry Parker, oil driller of Laredo, Tex., please notify sick mother, Mrs. Mary Parker, 448 St. James Place, Chicago, Ill.

WANTED—Gasoline brokers and marketers salesmen to sell our Ajax gasoline, car lots to jobbers and filling stations; good commission. Reply, Victor Petroleum Co., Lexington, Ky.

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SALES MANAGER will put $10,000 and services into business or venture that promises a worth-while future. P. O. Box 457, Chicago.

PAINT ATTRACTIVE signs and showcards rapidly with letter patterns. Samples for stamp. John Rahn, 2433 Greenview Ave., Chicago, Ill.

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6 lines	1.50	2.40	3.30	4.20
7 lines	1.75	2.80	3.85	4.90
8 lines	2.00	3.20	4.40	5.60
9 lines	2.25	3.60	4.95	6.30
10 lines	2.50	4.00	5.50	7.00

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In so doing you will be helping a most worthy cause and spreading happiness.

BROKERS, NOTICE! Brokers and others who desire to make reliable connection in the Oklahoma oil fields, write me. Best bank references; 10 years' experience; have helped many others make money; can furnish oil production, leases and royalties in good fields. If you desire to buy or handle oil properties, write me. John S. Graham, Oil Producer, Chickasha, Okla.

BUSINESS OPPORTUNITY

EASTERN CAPITAL is interested in refining proposition. Give full particulars in first letter. Address Box 808, care The Oil and Gas Journal, Tulsa, Okla.

JOHNSTON DRILLING CO., INC., El Dorado, Ark., experienced oil well contractors, can get proven acreage payable out of half first oil and contract to drill your well. Also have wildcat blocks.

ORGANIZE YOUR BUSINESS under Declaration of Trust with all the advantages of a corporation; none of its disadvantages; good in any State; no State fee or State or Federal reports; no blue sky. Corporation Substitute Co., 572 Sheidley Bldg., Kansas City, Mo.

WILL FURNISH a 320-acre block in Pushmataha County for drilling contract. Wm. J. Riley, Atlantic City, N. J.

WANTED—An issue of securities to float in the East by reliable concern on commission. Address Brokers, U. S. Realty Bldg., Suite 512, New York.

PRACTICAL oil man, controlling locating process tested and proven, needs small amount additional capital. Big business contracted and in prospect. Positively the best oil proposition in the country. P. O. Box 419, Oklahoma City.

COMMON LAW COMPANIES — Organize under Declaration of Trust; many advantages; legal everywhere; managed by trustees; limited liability. No State organization fees, reports or franchise tax. Meet or do business anywhere. Better than a corporation or partnership. Booklet free. Modern Organization Co., 304 South Broadway, Los Angeles, Calif.

CAPITAL RAISING — Compaigns planned, written, printed — everything complete ready to mail to investors. Twenty years' experience handling investment advertising. Clients all over America. Big, illustrated book, "How to Raise Capital" free if you submit detailed outline of your proposition. Ernest F. Gardner, L-511 Ridge Arcade, Kansas City, Mo.

Christmas is coming. You will want to give a present to your friend; a gift that will help him in his desire for advancement; a gift worthy of his intelligence.

The Oil and Gas Journal will make an excellent gift. It will help your friend and throughout the year it will be a reminder of your friendship.

Send your friend's name and complete address with your remittance to us and The Oil and Gas Journal will be mailed to him every week.

We will advise him of your kindness.

POSITION WANTED

PRACTICAL OIL MAN, familiar with field work, leasing of land, abstracting or titles, drilling, pumping powers, etc., would go to foreign country. Office man with executive ability. Box CLC, The Oil and Gas Journal, 30 Church St., New York.

WILL CONSIDER position superintending refinery for salary and per cent of net profits to assure company of my ability. Box 202, Grandfield, Okla.

FARM FOREMAN desires a change. Have been in Mid-Continent Field for 20 years. Can go anywhere. Can handle shallow or deep production. Address, Box 127, De Noya, Okla.

HIGH-CLASS man, experienced officer and department head, qualified in all lines of production office work; expert accountant and organizer; pleasing personality, with ability to meet the demands of the position, familiar with all Mid-Continent fields, wishes to make new connection by January 1. Address Box 902, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

ALL-ROUND oil man needs position. Thoroughly competent to handle office or field work, leases, titles, etc. Smith, 916 N. Shartel, Oklahoma City.

MECHANICAL ENGINEER, with broad experience in large refinery engineering, designing, building, testing and operating gasoline plants, will be open for position with responsible company about January 1. Box 800, care The Oil and Gas Journal, Tulsa, Okla.

SUPERINTENDENT of tools and production and expert fisherman, desires connection with reliable oil company; years of practical experience. Can go anywhere. Box 110, The Oil and Gas Journal, Tulsa, Okla.

LUBRICATING ENGINEER and manager retail sales, open for consideration; 10 years' experience. Address Box 900, care The Oil and Gas Journal, Tulsa Okla.

MINING ENGINEER — Twenty-five years experience, open for engagement. Ten years in Mexico and five years in South America. Conversant with geology of oil. Address Dargin, Hotel Sylvania, Denver, Colo.

SALESMAN—Four years' experience in sales of motor oils, plant oils, gasoline and kerosene. Desire a commission proposition, but would consider a salary job. Address Box 600, care The Oil and Gas Journal, Tulsa, Okla.

Answer the 1924 Red Cross Roll Call.

FIELD MANAGER, who has had several years' experience in charge of production and drilling for large companies in the Mid-Continent and Wyoming fields, is open for a position of responsibility. Am a graduate engineer and possess references of the highest character. My experience, which has been very thorough and extensive as an executive and field manager, qualifies me to handle the operations of a private individual or the work of district superintendent. If you are in need of a man who has developed character and initiative, please address Box 803, care The Oil and Gas Journal, Tulsa, Okla.

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STILL SUPERINTENDENT, who has had 13 years' experience on steam, rerun, crude and cracking processes, desires change to a growing organization and where there is a large opportunity for advancement. Address Box 801, care The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED—Graduate geologist, single, 27 years of age, three years' experience in Mexico, mostly reconnoissance, for past year chief geologist for small company, desires position in Latin America or Asia. Best of references. Write Box 807, care The Oil and Gas Journal, Tulsa, Okla.

REFINERY MANAGER - Superintendent desires connection with responsible concern; 14 years' experience in construction and refining; at present in charge of operations and sales of company in south. High-class references. Write Box 806, care The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED by young man with oil or supply company. Has had 8 years' experience in warehouse and purchasing department. Can furnish A-1 reference. Address Box 1281, Bartlesville, Okla.

MECHANICAL POSITION desired. Technical education, practical contract shop machinist. Technical and practical oil field specialty manufacture; erection and maintenance steam, oil and gas units. Not afraid of work or responsibilities. Address Box 802, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

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REFINERY Superintendent wishes position; 20 years' experience; have built two refineries. Address R. C., care The Oil and Gas Journal, Tulsa, Okla.

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NEW RUMANIAN CONCESSIONS

Negotiations are being conducted relative to the founding of a company for the exploitation of the petroleum fields of Rumania belonging to the firm of Ilias Stratulat, in Bucharest, which supplies large quantities of benzine to the Czecho-Slovak Ministry of National Defense. According to reports the capital is to be supplied by American, Rumanian, and Czecho-Slovak houses, and the amount is fixed tentatively at 100,000,000 lei. It is stated the Rumanian firm has received further concessions of oil lands from the Government in the same region where its previous properties are located, and where are situated the wells of the Astra Romana and other large Rumanian companies.

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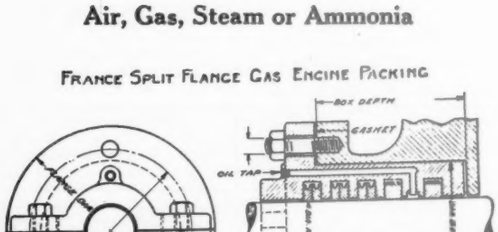

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HIGHER CRUDE PRICES EXPECTED ALONG GULF

HOUSTON, Texas, Nov. 26.—Chief concern among refiners of the coastal area is over the trend of the crude market. With production dropping slightly each week and drilling at a low ebb, the crude price structure is gaining strength steadily.

There are rumors of premiums already. But a canvass of the independent refiners of the Houston section failed to find any paying premiums for crude or offering them. The men asked, however, believe the price of coastal grade A crude will advance within two months and they will not be surprised to see premiums paid previous to marking of the advance.

The rumors of premiums had to do with the inquiries of foreign buyers, who were offering 25 cents above the $1 price of the better grade of coastal crude. Since very little coastal crude goes to Europe, these rumors have not been taken seriously.

The basis for the belief in a higher price for coastal crude oil is that production is now but slightly higher than the capacity of coastal refineries. Since some plants are not operating, this still leaves more crude than can be made into lubricants on the Gulf coast. But shipments of crude for refining along the Atlantic seaboard continue to grow, so the demand for this oil is on the increase, while production is declining.

This belief in higher prices for coastal oil is not new to refiners of the section. When the $1 low was reached, many expressed the opinion that all tanks should be filled. But prices in other sections were cut later and this kept the buyers fearful, despite their beliefs. So there has been very little buying ahead of refinery capacity. Now that indications point to higher prices, buying to fill crude storage may become general.

The demand for lubricants continues firm with prices unchanged over last week. The fall and early winter have proven the best season of the year for coastal refiners. Business for the past two months has been such that many have forgotten the late start on the movement of summer oils, a season that was up to standard in the coastal area.

PREMIUM BEING PAID FOR PENNSYLVANIA OIL

OIL CITY, Pa., Nov. 26.—The big news of the past week in northwestern Pennsylvania oil circles is the fact that a premimum of 10 cents a barrel is being paid for Pennsylvania grade crude oil. The name of the buyer is kept secret but it is stated that the crude is being purchased for actual consumption and not for speculation. The contract calls for the purchase of 1,000 bbls. a day and is good from day to day until countermanded.

Gasoline is the weak spot of the refined market. Consumption has decreased at a fast rate during the past week and the demand at the refineries is way off. At the present time there is a shortage of absorption gasoline in the local markets, but this is only a temporary condition as lots of it is on the way.

Kerosene is about the same as a week ago and is being sold in good shape.

Neutrals are holding their own. Cylinder stocks are the strongest that they have been in some time and the demand for 600 steam refined is especially good.

Fuel oil is weaker both in demand and price, but local followers of the market are expecting an improvement as soon as the weather becomes colder.

Wax continues to be very strong.

MADE 4,000 MORE CARS

Final figures of the department of commerce on the production of motor cars are 4,000 larger than the preliminary estimate. The total was 365,107, including 334,966 passenger cars and 30,141 trucks. In October last year production was 217,566 passenger cars and 21,795 trucks.

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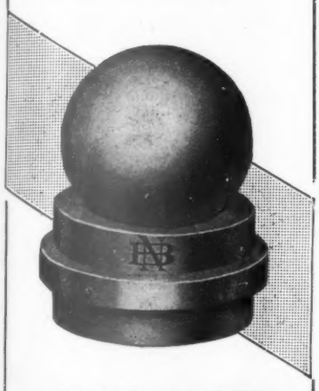

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FRANCE ORGANIZING OIL TRUST WITH GOVERNMENT COOPERATION

If the French parliament approves, France will ere long have her oil supply in charge of a national trust or combine in which the State will be a partner.

At the instigation of Premier Poincare, negotiations have been started with all the leading interests in the oil business in Paris and a scheme is being worked out by a committee presided over by Director Pineau of the national bureau of petrol and oil, which operates under the ministry of commerce. Details have yet to be published, but it is known that the State proposes to concede to the trust its 25 per cent share in the Turkish Petroleum Co. and any privileges it may obtain in Russia, Rumania, Turkey or elsewhere by future negotiation.

Being obliged to rely on foreign supplies for 90 per cent of her requirements, France's desire is to make sure of adequate provision in time of peace and war. She does not want to be at the mercy of the Standard Oil and the Royal Dutch. She has already taken steps towards freedom, but the definite regulation of her oil policy has yet to be fixed. When the war closed the State monopoly was abolished, but various acts are still in force and other new ones have been passed which give the government strict supervision of the traffic.

To Maintain a Reserve

In order to constitute a reserve, importers are obliged to keep in stock the equivalent of the quarter of the quantities declared by each for consumption in the preceding year and thus today there are more than 300,000 tons in store, mainly gasoline, which, in the event of the outbreak of hostilities, would enable the country to carry on for nearly four months. Official licenses are required for importing oil and on every ton imported 10 francs must be paid as a contribution to the expenses of the national bureau, while there are in addition a 20-franc excise duty and a 5-franc special temporary tax. The object of all these levies, which in the result amount to 50 per cent of the cost price of gasoline, is to develop the French oil industry in every way possible.

(1) By this means it has been sought: to develop home production in the only French oil field at Pechelbronn, in Alsace, whose output has already been increased from 45,000 tons under the German regime to 75,000 and which supplies now a quarter of the lubricating oils consumed in France;

(2) To encourage prospecting elsewhere in France and in French colonies, especially Madagascar;

(3) To stimulate the refining industry, especially by favoring importation of heavy oils in the tariff and on the railways;

(4) To constitute a fleet of tankers worthy of France. She had a tonnage of only 20,000 during the war, it is now 180,000, and it is to be brought up to 200,000;

(5) To increase storage capacity from the 500,000 tons of war-time to more than double—it is actually over 1,000,000 tons today and is still growing.

Gasoline and Alcohol

Recently another step has been taken to reduce the dependence on foreign oils by legislation compelling importers to buy from the State monopoly authorities every month a quantity of domestic alcohol (produced from beetroot and molasses) equal to 10 per cent of the oils cleared from the customs during the preceding month. This is to be mixed half and half with gasoline pure and offered for sale under the name of the national carburant for all the purposes for which gasoline is used. It will be noted that 90 per cent of the imports of gasoline are allowed still to be sold unmixed, but the law is an experiment. If the National Carburant proves satisfactory technically and becomes popular, the restriction on the sale of pure gasoline will be increased.

Among measures taken for insuring French supplies of oil, there is the treaty of San Remo granting the already-mentioned French share in Mesopotamia through the Turkish Petroleum Co. and the more recent convention in Poland giving French interests special privileges in the Polish oil industry and the French State special rights to Polish oil. A similar convention is proposed with Rumania, where French capitalists have an interest in properties formerly controlled by Germans. Then, too, a common oil policy is being elaborated with Belgium.

Under One Group

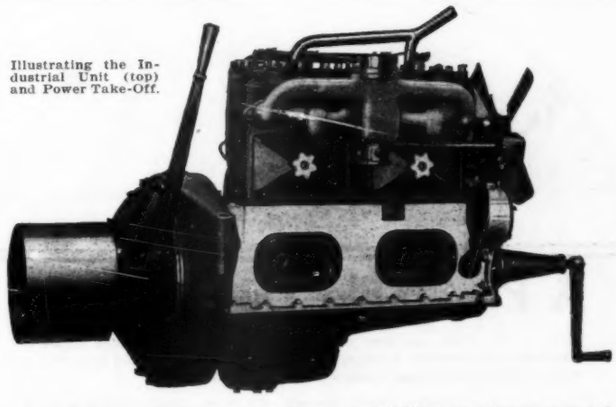
It remains now to constitute all the French oil interests under one group and this is the law now being drawn up. The matter has been debated already in parliament and several rival projects have been formulated. There is a party for a State monopoly, and one for complete freedom. The government appears to have decided in favor of something between the two. Seeing that French requirements in gasoline amount to 1,200,000 tons annually and are growing, the new scheme will be of interest elsewhere than in France alone. Especially to American oil men if only for the reason that the United States continues to supply France with almost all she needs. Last year out of a total of 8,694,000 hectoliters of gasoline brought in for consumption 6,538,000 came from America; of other refined oils, amounting to 3,231,000 hectoliters, 2,927,000 were of American origin, and of 2,656,000 hectoliters of lubricating and other heavy oils, America supplied 2,256,000. There is no sign of any great change in the figures to date for 1923.

A petroleum expert of the Rumanian government is in Paris in an endeavor to conclude an agreement with French bankers for a loan of 500,000,000 francs to Rumania. The loan would be payable in 10 years in oil, which the government would secure in the shape of royalties from State lands. It is said by this method France presumably would secure large quantities of petroleum and circumvent the San Remo conference understanding with the United States and Great Britain.

PLANNING TO DEVELOP NEW MEXICO LEASES

OKLAHOMA CITY, Nov. 26.—Plans are being made for beginning development in the early spring of leases on the Rattlesnake, Beautiful Mountain and Hogback structures of the Navajo reservation of northwestern New Mexico awarded to R. C. Ten Eyck and associates, according to Mr. Ten Eyck, who announced also that the New Mexico Central Railway Co., of which he is general manager, expects to extend its line from Santa Fe to Gallinas during next year. It is understood the railway company backed its general manager in the taking of oil and gas leases and that coincident with construction of its Gallinas extension it will develop copper and probably other mineral deposits in the San Juan country. Mr. Ten Eyck was awarded six leases, four on the Hogback structure on which the Midwest Refining Co. made its oil and gas discoveries.

Edwin B. Hopkins, a consulting geologist of New York City, reached the San Juan section last week to make an examination of what are known as the Munoz oil and gas leases and make estimates with reference to the routes and costs of pipe lines.



Illustrating the Industrial Unit (top) and Power Take-Off.

Waukesha

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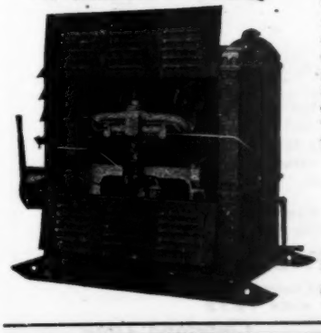

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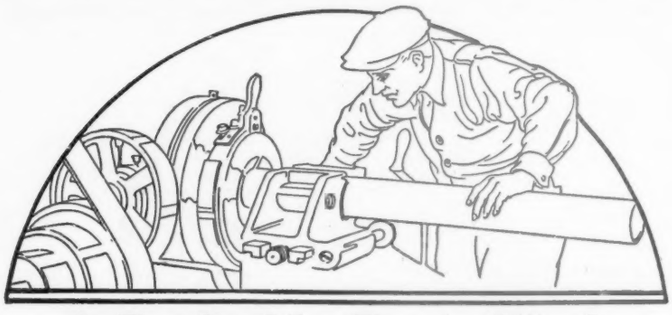

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EXPLORATION PLANS FOR COMING YEAR

(Continued from Page 62)

ing of blocks of acreage carrying iron-clad drilling contracts.

Two, and possibly three new pools are already in sight in north Louisiana and one, at least, in south Arkansas. A producing well in the north end of Union Parish and another in Webster will undoubtedly insure a renewal of wildcat activity throughout the entire territory which lies between Caddo and Haynesville and Haynesville and the Monroe gas field, and in every parish surrounding the Monroe gas field, tests are in progress and more are in sight in the determined effort to locate the pool which, it is confidently expected, lies under or on the edge of the largest gas field in the world.

A showing of oil in Nevada County, Arkansas, has been followed by a wildcat activity which is regarded as only in its infancy and scattered tests throughout the counties bordering on the Louisiana line, as well as in the Texas counties on the western border, promise great wildcat activity.

Very late reports from the Caddo Parish operations indicate extraordinary possibilities in sight from a test started in the area northwest of Cross Lake, about 12 miles from Shreveport and the completion of a well extending the Caddo Field about 5 miles has already resulted in the report of location of three additional tests. In the Cross Lake vicinity a block of acreage lying northeast of the interesting test mentioned above and the almost unquestioned proof of the existence of a profitable gas area in that vicinity is reported to have determined the holders of these blocks upon a campaign of development to the full extent of their holdings which aggregate nearly 8,000 acres. Another 8,000-acre block in the area 4 miles northeast of Keithsville in the same parish is also to be developed.

Tight Money Retards Work

Interviews with independent operators who are known as wildcatters in the North Central Texas Field, also with the development managers of the big companies, brings out one response, that future conditions of the industry will determine what will be done in 1924 relative to drilling in undeveloped territory. The consensus of opinion at this time is that the so-called independents under any conditions that may prevail in the future, no matter how promising, will not bestir themselves to any great extent in an attempt to develop new territory, the principal reason given by them, being lack of money and their inability to secure funds in sufficient amounts to drill strictly wildcat wells.

The conditions surrounding the handling of a drilling block of acreage has undergone a decided change in Texas since the boom days. During that time if a wildcatter had a good financial standing and was known as a practical operator, in most cases sufficient leased acreage could be sold out of the block and surrounding the proposed test to take care of the expense of drilling and leave the operator many acres to leases for his trouble. Now the operator and associates must furnish the cash as leases cannot be sold at any price, even a few miles from production.

The North Central Texas Field offers to the wildcatter both deep and semi-deep territory for exploration. In the deeper producing lime and sand territories, some little development is going ahead in Carson and Hutchinson Counties in the Panhandle district.

In Mitchell, Palo Pinto and Shackelford Counties drilling will continue as all of these counties have a small production from the deeper levels and there is a general belief that there is a real oil pool located somewhere within their boundaries. All of these counties will have some play during the year 1924. In the semi-deep producing counties, Wichita, Archer, Clay and north Young, wildcatting both by the small operator and the big companies will continue during

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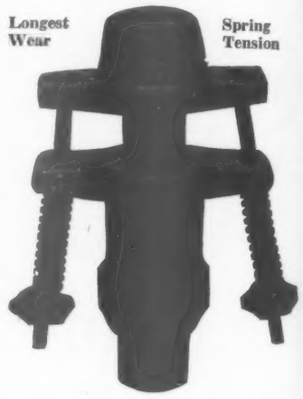

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the coming year, but to what extent the conditions of the industry at that time will determine. In all of this semi-deep territory the pools are small, the producing depths range from 700 to 2,000 feet. The cost of drilling a test is around one-third of what it is in the deep lime fields, consequently both the small and large operators, look with more favor on this less expensive territory.

There are several counties to the west of the present large producing territory in the North Central Texas Field that have several tests shut down. Nearly all of these tests are idle on account of a lack of funds to continue. If money for wildcatting would "ease up," some of these tests would be drilled to around 3,500 feet and their completion would determine the future drilling development of that immediate locality.

Wildcat Plans on Gulf Coast

With a steady declining production in the Gulf Coast Pools of Texas and Louisiana, all the major companies have fortified themselves by acquiring leases or lands in fee around the known saline domes. The policy of the large companies during the past two years has been to buy acreage in fee and thus free themselves of rentals and drilling obligations. This is especially true of holdings in counties to the southwest, where the acreage is in big blocks owned by ranchmen. The owner usually retains one-eighth of the mineral rights and the purchaser takes the other seven-eighths. Such acreage is strictly wildcat, with nothing to recommend it other than the geological report that it is "structure." By thus acquiring vast tracts the big operating companies can sit back and let the other fellow do the actual wildcatting.

In the Coastal Plains belt proper such conditions do not exist with reference to the land. In all but two instances the acreage is cut into small tracts on some of which operators have been paying rentals for years. The two exceptions are the recently developed domes at Big Creek, 7 miles south of Richmond in Fort Bend County and near Boling in Wharton County. The Gulf Production Co. has several thousand acres on and around these domes, Snowden and McSweeney being interested jointly with the Gulf at Big Creek. They have drilled several holes there, developed some 250 barrels production. These interests are now starting three more wells. The Gulf Co. alone is drilling its second test, No. 1 Boling, developed the salt and thus placed the dome on the map as a prospect.

All the older and partially defined domes are due for more campaign work during 1924, provided conditions improve. These are: Stratton Ridge in Brazoria County, High Island, Galveston County, Big Hill in Jefferson County, Shephards Mott in Matagorda County; South of Liberty and northeast of Dayton in Liberty County; west of the Batson Pool in Hardin County, Barber Hill and various parts of Chambers County; Hockley, Harris County; the Palangana Dome in Duval County and the territory southeast of Kingsville, Kleberg County. Inland from the Gulf, work is scheduled in Guadalupe County and other counties along the Balcones Fault, including Bandera.

The Humble Oil & Refining Co. has recently acquired 154 acres in the Aycock survey at Stratton Ridge and the Freeport Sulphur Co. is drilling now on the northeast side. The Sun Oil Co., Yount-Lee Oil Co., Carter and others, Gulf Coast Oil and some Beaumont operators are now drilling at High Island and more work is contemplated. The Houston Oil Co. has two wells at Big Hill, southwest of Beaumont and is now drilling three more and the Gulf Production Co. has one rig running. The Texas Exploration Co. has one 10-barrel well on the north side of the dome at Hockley and is drilling another. The Gulf Co. drilled several on the east and southeast sides and still retains acreage. All the major companies and many individuals hold leases at Barber Hill in Chambers County, where a production of 350 bar-

(Continued on Page 118)

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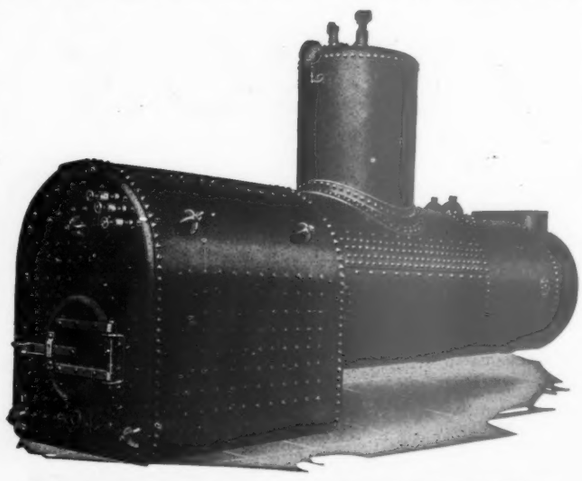

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TO VALIDATE MEXICAN CONCESSIONS FOR OIL

A law soon to come before the Mexican senate validates petroleum concessions and titles to land acquired prior to the promulgation of the present constitution in cases where exploitation was begun before May 1, 1917, and where contracts were made with the land owners before that date. The measure also contains an important concession designed to meet the representations of the United States recognition commissioners at the conference last summer. Concessionaries obtaining petroleum land and contracts prior to the above date, but who have not exploited the properties may retain petroleum rights if they begin exploitation within one year from the passage of the proposed law. Federal control over the subsoil petroleum rights is reaffirmed in the bill, but the nation withdraws from the actual exploitation of all land within the federal zones, this privilege being given over to private enterprise.

Exploration rights are granted only in the case of such lands as are not officially recognized as containing petroleum. The permits are valid for only one year and the land thus taken must not exceed 2,000 hectares (about 4,500 acres). Concessions for exploitation will not be granted for longer than 50 years. The concessionaire must pay rent to the owner of the land, and markets must be established at places designated by the government for the sale of the product at prices not higher than the average in the United States.

Holders of concessions who are not included among those acquiring rights prior to May 1, 1917, are given the prior privilege of renouncing their properties within five years from the promulgation of the proposed law. Possessors of previous concessions may retain them by complying with the provisions of the measure within 180 days. The president is given the right to set aside and reserve any oil zones.

LEASE 300,000 ACRES OF INDIAN OIL LAND

More than 300,000 acres of Indian land was leased for oil and gas during the fiscal year ending June 30, 1923, as shown by the annual report of Charles H. Burke, commissioner of Indian affairs. The gross oil production from Indian land was about 54,000,000 barrels and the revenue to the Indians about $37,000,000. The bureau leased 67,864 acres of the Osage reservation and collected a total bonus of $14,246,000 on 48,000 acres, several 160-acre leases selling for more than $1,000,000 each, one bringing $1,325,000. The Osages received from existing oil and gas leases $30,572,111. In the Five Tribes 197,540 acres are leased for oil and gas, and the total revenue for the year was $5,591,000.

The Indian population of the United States, exclusive of Alaska, as reported by Commissioner Burke, is 344,303, an increase of 13,664 since 1913, and nearly 4,000 during the year. The total value of individual and tribal Indian property is more than $1,000,000,000, a gain of $283,000,000 during the year. In this total is included the value of oil, gas and other minerals of $250,000,000.

HALF TEXAS OUTPUT FROM POWELL FIELD

AUSTIN, Tex., Nov. 27.—Oil gathered by pipe line companies in Texas during October total 15,380,642 barrels. According to the Oil and Gas Division of the Railroad Commission this breaks all records in Texas. The largest amount of oil was gathered from fields in Navarro County, amounting to 7,534,897 barrels. Limestone County was second with 2,053,275 barrels. Wichita, third, with 1,651,041 barrels.

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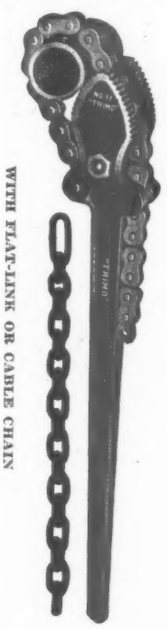

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Union Oil Company Control Still Held By Stewart Family

Stock of the Union Oil Associates and the Union Oil Co. of California will remain grouped as it was before the death of Lyman Stewart, chairman of the board and founder of the company's business, according to those who have given the situation thought.

The Union Oil Associates is a holding company of the majority stockholders in the Union Oil Co. of California and a large part of this holding company's stock is owned by the Stewart estate and members of the family. It was Stewart stock which served as a nucleus for the holding company's formation when it was organized by the late Isaac Milbank, heading a special committee.

Now that the Stewart estate is likely to be distributed to heirs, there were some who thought that the stock might be scattered. It is stated that no matter what is now done with the stock the holding company will function, but that a change in ownership might affect the voting merely. No action will be taken by the company until the end of the year.

W. L. Stewart, president of the company, is a son of the late Lyman Stewart. During the latter's declining years the son directed the greater part of the activities in conjunction with E. W. Clark, executive vice president, who is still on duty.

Lyman Stewart was one of the earliest Pennsylvania operators and the son was born in that State during the petroleum activities following the Civil War, in which the father was a pioneer. The family came to California in 1883 and the elder Stewart organized the Hardison and Stewart partnership, from which evolved the present Union Oil Co. of California. W. L. Stewart's first connection with the company was in 1889, when, following his graduation from the University of California, he was engaged to dig a cellar under the new office of the company in Santa Paula. Since then he has been continuously in the service of the company, rising by successive steps to the presidency.

No "gusher" oil well in the Union Oil Co.'s fields is considered to have been a greater "discovery" than the engagement of E. W. Clark, who is executive vice president with the powers of general manager included. He was manager of the Pacific Coast Railway in 1910, with headquarters at San Luis Obispo, when the Union Oil Co. sought a manager for its subsidiary, the Producers Transportation Co., which operated a pipe line from the San Joaquin Valley to the coast. Clark was chosen and in two years he was made manager of transportation of the Union Oil Co.; in four years he was elected a vice president, and in six he was made general manager and later executive vice president.

MEXICAN OIL RETRENCHMENT

NEW YORK, Nov. 25.—In accordance with the Mexican retrenchment policy the recently opened Auditorio de Petroleo office will probably be closed and all employes from the auditor down discharged. Oil companies are expected to protest as this office has proved a great convenience, enabling them to deal direct with some one in power, instead of having to refer matters in question or dispute to Mexico City.

RESTRICTED INDIAN'S LEASE

WASHINGTON, D. C., Nov. 27.—A restricted Indian cannot make a lease on his land without the approval of the Secretary of the Interior, the supreme court decided in reversing the decision of the Oklahoma Supreme Court in the case of Eli Bunch, fullblood Cherokee, of Muskogee County, against J. B. Cole and T. B. Mathews.

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(PATENTED)

LARKIN'S IMPROVED SAND PUMP (PATENTED)

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Get "United" prices before buying.

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EXPLORATION PLANS FOR COMING YEAR

(Continued from Page 115)

rels per day has been developed with no wells drilled for 60 days. The production is on the southwest side of the hill. Nearly all of those interested plan for some more work next year.

The Texas Co. is taking leases around Danbury, in Brazoria County, and also west of Batson. This company has done very little wildcat work during the past year. It is now working out a prospect southwest of Brenham.

The Vacuum Oil Co. recently organized a production department and it has secured leases and fee lands in various Coastal Counties, notably at High Island and in Brazoria County. It also has holdings in south Louisiana and is now making a test near Westlake, north of Lake Charles. The Rycade Oil Co., a subsidiary of Amerada Petroleum Corp., has been active in the leasing line, confining its operations, however, to producing domes and prospective domes. It has holdings in Chambers, Matagorda, Jefferson and other counties, as well as in the Orange, Marlham, Jennings and other pools. The Roxana Petroleum Co. has representatives in the Coastal region who have been acquiring leases, some of which will be developed during the coming year.

Prospective Wildcats

Considerable wildcat work was under way in Webb, Zapata, Starr, Jim Hogg, Kleberg, Hidalgo, Bexar, Atascosa and other southwest counties when the Powell Field flooded the market and caused work to be suspended. Most of these wells will resume work next year, always provided that prices improve enough to justify wildcatting.

Over in south Louisiana, tests will be drilled in Cameron, Calcasieu, St. Landry and Evangeline Parishes next year. In fact, some have started operations.

There is a vast amount of territory in the Coastal Plains region, the west and southwest counties and East Texas, where surface and geological conditions seem favorable for wildcat work. All that is needed to start the drill is higher prices.

Plans in Rocky Mountain Fields

Wildcatting in the Rocky Mountain region is to have considerable impetus in the coming year. Already many plans are being made to drill wells in remote places and explore the edges of areas already shown productive both in Wyoming, Montana and Colorado. Utah and Idaho are receiving a little attention, but the bulk of the work appears to be going into the three States first cited.

This depends wholly upon the market conditions about the first of the year, however. At present it appears as though Rocky Mountain operators may see 50-cent crude before Christmas and then experience a gradual rise in the market to meet the spring demand for motor gasoline and oils. If the market shows signs of rising to $1.50 or $2 along in next January, many officials here say that their firms will start out on an active wildcatting campaign, while if the market continues dead and gives but little hope of higher prices, the coming season will be dull in the wildcat districts.

At present there are several wildcats drilling in Wyoming and Montana that will be continued to completion this winter, and one in Colorado. A few wells are also being put down in Utah but the work there is not attracting much attention and the oil men in the main seem to have passed up Utah until something definite is brought in. Mere reports of good showings or gas pressures do not create even a ripple of excitement any more.

In Wyoming the Producers & Refiners are drilling a wildcat test near Thornton, in the northeast corner of the State and this well is expected to be completed in a few days. The same company is drilling the Enos Creek well deeper, although there is evidence of a commercial supply of gas in the sands already passed

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through. The same company is also drilling several semi-wildcat wells in the Lost Soldier on structures out on the fringe of the proven areas.

The Ohio Oil Co. may have opened a new field with its Rex Lake well in Albany County, southern Wyoming. This wildcat is drilling on, however, to the Dakota sand for a complete test.

The Southwestern Petroleum Co., drilling south of Medicine Bow in Carbon County, is also expected to develop a field in the Muddy sand on account of the previous showing there, although the discovery well is now drilling to the deeper formations for a complete test.

The Baxter Basin area presents good wildcat prospects, especially in the sands lying under the Frontier formations that now make the gas production. Next spring, several firms interested in that field state, wells will be drilled to the Dakota formation if the market looks at all favorable.

West of Baxter Basin, the territory about Kemmerer will have two wildcats drilling next spring. There are many firms interested through having tracts of leases in LaBarge and Big Piney and these firms would probably start wildcatting were the market favorable.

In Colorado, only one wildcat area is being watched with any interest. This is the Hamilton structure near Craig, where a wildcat well found a large showing of shale oil and then drilled on down to the Frontier sands. This area is leased by all the larger firms and the well of The Texas Co. should be in the sand within a few days. In case oil is found in commercial quantities it will cause a large amount of wildcatting in Colorado next spring if the market price of oil is at all favorable.

In Montana there are nine wildcats active at this time with a large number, probably 40 to 50 tests, shut down in wildcat areas for lack of capital to finish the holes. The Ohio Oil Co.'s test on the Sherrard Dome in Blaine County, is exciting the most interest of any of the active wildcats. The Porcupine Dome in Rosebud County, the Gladys Belle Dome in Liberty County, the Bowdoin Dome in Phillips County, Jackson Dome in Fergus County, Flatwillow in the same county; Cowboy Creek Dome in Choteau County; Bowes Dome in Blaine County and the Oil Springs Dome of the Judith River Basin, are all possibilities which will receive the wildcatters' attention.

It has been computed by many petroleum engineers in the Rocky Mountain region that the cost of producing a barrel of crude there is around 65 to 70 cents in the field. When the market price of crude goes below that figure, only those operators who are exceptionally well situated with flowing wells and well equipped leases, can keep up production. If the market price of oil remains below $1.25 during the early months of spring, the consensus of opinion in Casper is that there will be little or no wildcatting. A few wells may be started by parties who are not familiar with the oil business, but the experienced operators and firms will remain quiet.

Both the Dakotas and Nebraska offer some inducement to wildcatters along the Montana and Wyoming State lines, but with one exception in northwest South Dakota, near Baker, Mont., nothing is in prospect in that territory. In Idaho a recent rumor that a well had found oil did not bring forth anything definite on investigation. The country about the Hogback Dome in New Mexico where the Midwest, Producers & Refiners and others are active, is looked upon here as a freak that the small wildcatter had better keep away from on account of the expense. The oil men who have returned to Casper from there speak dubiously of the chances of a field being brought in and none of them have ventured any great sums in leases so far.

With California's Wildcatters

With the close of the year at hand and production showing a sharp decline, California operators are looking forward to a much smaller production and a possible increase in crude prices next spring. It

(Continued on Page 122)

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The designs, materials and workmanship are of the Lunkenheimer Standard and therefore satisfactory prolonged service and economy of maintenance are assured.

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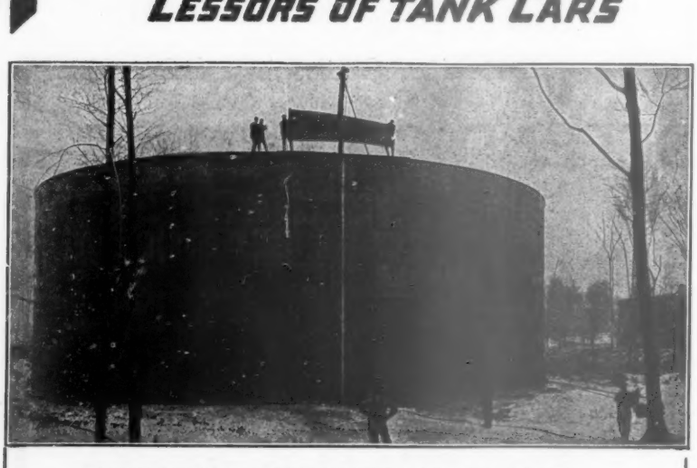

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These pictures show a Turbinair Hoist handling 5x20 ft. plates, weighing 2000 lb. each, in building 18 55,000-barrel storage tanks for the Standard Oil Company of New York, at Tappan, New York.

The Warren City Tank and Boiler Company, the contractor, states that the use of these hoists, instead of the old method, (a team of horses and an "A" frame), has largely reduced the construction time.

The Warren City Company uses Turbinair Hoists on all its field work of this sort.

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Japan Guarding Oil With Secrecy While Buying Needs Abroad

By Charles E. Kern

WASHINGTON, D. C., Nov. 26.—Within the last few days a report has gained circulation to the effect that during the recent earthquake 50,000,000 bbls. of fuel oil were destroyed in Japan. If this were true it would be of great importance to the producing industry, assuming that the 50,000,000 bbls of fuel oil were to be replaced. This report becomes of especial interest because it is now possible for the writer to state with a large degree of accuracy just how much fuel oil was destroyed by the Japanese earthquake, the amount being only about 686,000 bbls., this figure being less, rather than more than the actual quantity. This is quite negligible so far as the oil industry is concerned.

The only locality in Japan in which fuel oil was stored at the time of the earthquake, and affected by these earth disturbances, was Yokosuka and in its vicinity. There were four groups of tanks in the earthquake region there, showing a total of 98,000 long tons which, roughly estimated at seven barrels to the ton, would give 686,000 bbls. as the quantity destroyed.

The destruction of this fuel oil calls forth an interest in the fuel oil situation in Japan in respect to Japanese petroleum production, importation and stocks on hand. It may astonish the average person to know that Japan, with a navy three-fifths the size of that of Great Britain or of the United States, is producing only one-half of its domestic consumption of petroleum and its products, and possesses a total fuel oil storage of about 1,200,000 long tons, which, estimated at seven barrels per ton, gives a total storage of 8,400,000 bbls. of 42 gallons each. Probably this figure is less than the actual amount of storage in Japan, but it is believed to be correct within a 15 or 20 per cent margin of error. At least that amount of storage is actually accounted for by various reports of the Japanese Government and from other sources.

Production Decreasing

Official reports by the Japanese Government show that, from 1911 to 1921, inclusive, there were produced within the Japanese Empire 21,970,000 koku, a koku being 39.70 gallons as compared with our barrel of 42 gallons. But to the great disappointment of the Japanese this crude oil production within the empire is now decreasing. In 1911 the production was 1,500,000 koku, which was gradually increased until in the year 1916 it reached 2,600,000 koku, from which time it has fallen off until in the year 1921 the domestic production was 1,900,000 koku.

This decrease in production has very generally been ascribed to a gradual depletion of the wells, but it is questionable whether it is not partly accounted for by the policy of the Japanese Government to import oil and go easy on her own production, because during the period of the World War the larger quantities were being produced.

Fuel oil imports into Japan are stated in prices rather than quantities in official Japanese reports. From 1911 to 1921, inclusive, these imports amounted to 170,000,000 yen, or about $85,000,000. These figures are taken from the statistical reports of the Tokyo Chamber of Commerce. In considering the quantity of fuel oil that actually has been used by Japan during these years, it must be remembered that Japanese warships are frequently bunkered with oil at ports outside of the empire.

Probably the most important figures in respect to Japanese fuel oil storage are gained from statistics showing the tankage within the empire. These statistics indicate that of 215 tanks with a total capacity of 1,018,500 long tons, 15 with 63,400 long tons are owned by the

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Standard Oil Co., the others being largely native Japanese ownership. These figures are believed to be under the actual storage capacity of the empire, which probably is as much as 1,200,000 long tons or 8,400,000 bbls.

Oil Supply for War

The interesting features of these statistics relates to the limitation in fuel oil supplies that would be met by Japan in the event of a prolonged war. The Japanese navy would very soon be under the necessity of receiving fuel oil from a foreign source. This may be understood best by the fact that the United States Navy, only two-fifths larger than that of Japan, uses fuel oil during peace times at the rate of about 7,000,000 bbls. annually. This is partly the result of the fact that American battleships make long cruises and are employed in maneuvers necessary for proper training for officers and men that involve a large amount of steaming. On the other hand, the Japanese navy, because of its shortage of fuel oil, does not move about in a way comparable to the ships of the American Navy. The Japanese battleships are kept about the Japanese Islands and fuel oil expenditures are watched with great care.

These conditions do much to explain the tenacity with which Japan has held on to northern Sakhalin Island because it is that island that offers the only known nearby supply of crude oil that might be brought under the Japanese flag. As Harry F. Sinclair has a concession to northern Sakhalin oil deposits, and as the Russian Government seems able to take care of its interests in its part of the world, it is problematical just how long Japan will remain there. They are now holding the island as a hostage for the loss of the lives of several Japanese and are placing that loss in money anywhere from 200,000,000 to 350,000,000 yen, the payment of which would probably clean out the treasury of the Russian Government. Such life insurance values as the Japanese Government placed upon these Japanese subjects would stagger the American life insurance man if he were to attempt to insure Japanese lives at such a rate.

Mystery About Sakhalin

Once Japan is obliged to vacate northern Sakhalin Island and turn that rich oil area over to Harry F. Sinclair, Japan will be obliged to look for her future increase in oil production in southern Sakhalin. Southern Sakhalin Island is one of the problematical petroleum areas of the world. It was heralded a few years ago as being wonderfully rich in crude oil, but it is known that Japan has not actually produced oil there, commercially, although it is not known what the Japanese Government has found out about the potential oil production of the southern half of Sakhalin. The best reports that can be obtained indicate that the oil deposits are not as rich as were expected. But matters of this sort are so enshrouded in governmental secrecy that no one places absolute faith on any of the reports that have come out of the Orient respecting these deposits. Under any circumstances there would be considerable difficulty in obtaining these supplies of petroleum because in that far northern location work cannot be carried on to advantage more than half of the year. In northern Sakhalin Island three months is about the extent of the working period of the year when work may be carried on with advantage.

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ENID, Nov. 27.—A marriage license was issued to Miss Clarissa Dively, 62 years old, said to be the wealthiest woman in Garfield County, and Charles H. Conyers, 42 years old. When the Garber oil field was opened Miss Diveley viewed the oil wells with alarm, saying they would ruin the crops. Yet, with wealth pouring into her lap, she has become reconciled to the liquid gold industry, although she has never left the farm and continues to do light work in the fields.

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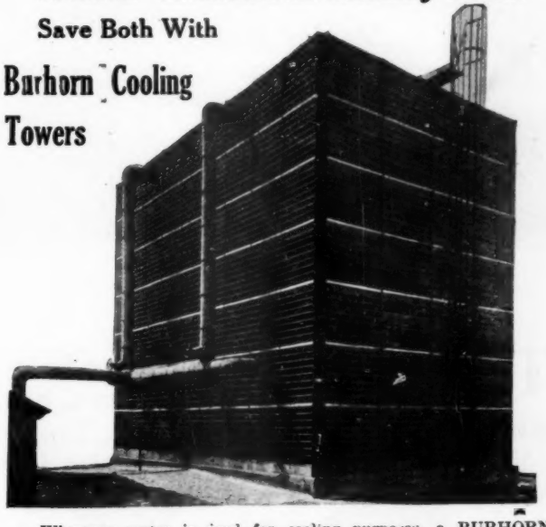

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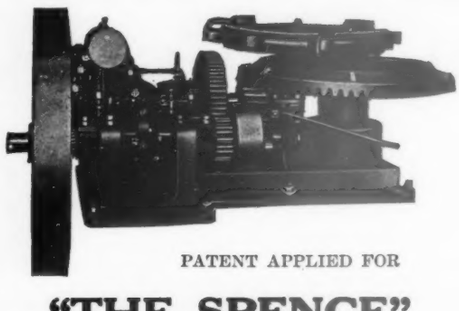

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EXPLORATION PLANS FOR COMING YEAR

(Continued from Page 119)

is needless to say that those in the San Joaquin Valley are eagerly looking forward to the resumption of operations once more with better prices. There has been at least one new field opened up each year in California since 1917 and if this record is to be maintained, and it is believed that it will, there must be at least a normal amount of new development work done.

Torrance was discovered by the C. C. M. Oil Co., in 1922, while in 1923, new fields at Wheeler Ridge and Compton have been opened up, the former giving evidence of being a limited area, while the latter gives promise of substantial production.

There has been no cessation in the amount of wildcatting in southern California during the past two or three years, although many prospectors in the northern area and elsewhere suspended operations during the recent period of overproduction.

As soon as the operations have been resumed on a general scale in the San Joaquin Valley a large amount of wildcatting will be done in that area. There has been very little unnecessary drilling done in that part of the State and, although operators will not get well under way until next summer, with a better return for low gravity crude and stabilization of the industry, they will undoubtedly make up for lost time. Geologists, although most of their work has been centered in and around Los Angeles for the past two years, have not neglected to study structures in the San Joaquin Valley. The extension of the Maricopa Field by the bringing in of the Transport Oil Co.'s well on the Maricopa Flats is evidence of this. The past two years have seen the greater amount of wildcatting done in southern California, but it would not be surprising to see this condition reversed during the coming year, 1924.

There are no prospective areas looking unusually promising at the present time, except possibly, the Jacolitos Dome near the old Coalinga Field, which is being tested by the Snowolene Oil Co. Practically all of the larger companies have secured acreage in the immediate vicinity of this test and a small production of high gravity oil is expected around the 3,900-foot mark. Several tests being made in the Buttonwillow area were suspended and in one or two cases abandoned when crude production started climbing and prices commenced to tumble a year or so ago. With the exception of the Jacolitos Dome, no area in particular gives evidence of developing production, although the amount of wildcatting being done will undoubtedly result in the opening up of at least one new field during the coming year.

Notwithstanding the fact that crude has been piling up and prices reduced to a minimum, new development work showed an increase during the past year, most of which has been in southern California. A decrease in outside work in 1924 may be expected but it will be offset by an increase in the San Joaquin Valley leaving the total amount of wildcatting to be done in the State at about normal.

In the Eastern Fields

The Trenton Rock Fields of Ohio and Indiana, notwithstanding its great age as an oil producing territory, holds out possibilities for deeper drilling. The field covers an area from 10 to 75 miles in width and close to 200 miles in length. In the gusher days 50 feet in the Trenton Rock was considered deep enough to find any pay that might exist. Salt water in those days was also a determining factor as to how deep the rock should be penetrated. In later years oil was found 550 feet in the Trenton, which gave reason for believing that the immense territory was well worthy of a general deeper drilling development. Recent years have seen the deeper drilling of many old wells with variable results and the coming year, with a market condition that will warrant it this form of wildcatting—for it is financially very hazardous—will be con-

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tinued. The fact that extensions have been made to the old Trenton Rock fields in the past year makes Central West operators believe that all of these extensions—overlooked in the big days of the field—have not been discovered and drilling just on the edge of the known development may be expected in 1924. It is believed that there are good possibilities for oil near Dayton, Piqua, Hamilton, and even as far south as Cincinnati and the territory near those cities is slated for wildcatting next year, while the Montpelier-Muncie territory in Indiana will also be given a further play in the deep horizons of the Trenton Rock.

The entire area of the old Central Ohio gas belt covering every county in the central part of the State presents shallow sand oil possibilities that are waiting only favorable market conditions. This territory is not expected to develop any but small wells.

Kentucky is already experiencing a wildcat campaign, for it is a known fact that every well drilled in parts of that State is virtually a wildcat. The bulk of the work the coming spring, regardless of oil conditions, will be centered in the southeastern part of Kentucky, in Martin, Floyd, Pike, Harlan and other counties along the Blue Ridge country. The wildcatter feels that in these counties he has a double-barrel chance, as that part of the State is known to be rich in natural gas, and by opening an extensive gas area, means a snug fortune. With conditions right in 1924, hardly a county in Kentucky will escape one or more wildcat tests.

Tennessee already has a number of wildcat tests under way, as have Mississippi, Alabama, Georgia, and even Florida. There are something like 80 wildcat wells at various depths in the last five named States.

Little was learned of plans for wildcatting in Indiana or Illinois, but both developed territory which will sometime be tested out. In the older fields of New York, Pennsylvania, West Virginia and Southeastern Ohio, the territory is so well defined that operations will continue to be mostly inside, with more or less drilling between pools.

JUAN FELIPE LEASE HELD BY HUASTECA CO.

NEW YORK, Nov. 26.—The capacity of the Mexican Government to meet the future salaries of its employes as well as to pay salaries due for the last month is assured through the settlement of the dispute as to the ownership of the Juan Felipe hacienda. The Huasteca Oil Co., one of the Doheny interests, has made arrangements with the Mexican Government to exploit these lands, the rights to which for months have been in dispute. The Secretary of Industry demanded proof of ownership of 75 per cent of primitive titles. The Huasteca Company, after depositing 3,000,000 pesos as a guarantee of good faith, battled in the courts to establish its claims. Arrangements were made by the Huasteca Company, by payment of 1,900,000 pesos to the government of the State of Vera Cruz, which claimed part ownership of the property, would obtain title and be permitted to start drilling. In addition the Huasteca Company pledges a loan of 10,000,000 pesos to the federal government. The permits for drilling were granted by the government in recognizing the company's ownership of the land. Oil men believe this marks the beginning of a new policy toward oil producers and that the government is removing its restrictions.

ELECTED PRESIDENT

Announcement is made of the election of A. E. Watts, a vice president of the Sinclair Consolidated Oil Corp., as president of the International Barnsdall Corp., to succeed Robert Law, Jr. Mr. Law will continue as chairman of the board of the Barnsdall Corp.

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KENTUCKY FUEL OIL CRACKING DESCRIBED

(Continued from Page 76)

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1. Pressure Distillate Oil.
   - a. Refining of Pressure Distillate
   - b. Gasoline
   - c. Gas Oil
     - May be used for
       1. Cracking Stocks
       2. Gas Making
       3. Light Fuel Oil
       4. Diesel Engines
2. Residuum—May be used for
   - a. Distillates
   - b. Coke
   - c. Asphalt
   - d. Fuel Oil
3. Uncondensable Gas—May be used for
   - a. Alcohols
   - b. Acetates
   - c. Glycols
   - d. Chlorhydrins
   - e. Lampblack
   - f. Welding purposes
   - g. Burning purposes
4. Coke—May be used for
   - a. Metallurgical purposes
   - b. Electrodes
   - c. Briquets
   - d. Fuel (direct)

Pressure Distillate Oil

(a) The pressure distillate oil of 54.8 Baume analyzed 73.5 per cent of Navy gasoline and 20.1 per cent gas oil of 36.2 gravity. The analysis is as follows using Hempel column.

Baume Gravity	54.8
Initial Boiling Point	78° F.
Unsaturated hydrocarbons	16%
Per Cent of Volume Distilled Over	Temp Deg. F.
10	152
20	216
30	267
40	310
50	352
60	386
70	420
73.5	445

Gas oil 20.1 per cent; 36.2 Be. Grav. The pressure distillate oil having a yellow color, and rather pungent odor was 66 Baume sulphuric acid treated at the rate of five pounds to the barrel. The agitation of the oil and acid requires approximately 45 minutes, when the oil and acid sludge are allowed to settle for 30 minutes. The acid sludge is drawn off. The oil is water washed to dissolve out, at least a portion of the sulphuric or sulphonic acids present. Then a solution of caustic soda is added to the oil and agitated, to neutralize the sulphuric and organic acid. The caustic soda sludge and oil are allowed to settle and the sludge is drawn. The oil is given a final water wash, and sent to the storage tank ready for distillation into marketable gasoline and gas oil.

Gasoline

(b) The gasoline fraction of the pressure distillate oil analyzed as follows:

(Standard Bureau of Mines Method)
Be. Gravity 56.7

Initial Boiling Point	112° F.
End Boiling Point	437° F.
Per Cent by Volume Distilled Over	Temp. Deg. F.
10	178
20	214
30	247
40	276
50	301
60	325
70	348
80	377
90	400
98	437

(c) The gas oil left as a residue in the distillation of the pressure distillate oil makes an excellent charging stock for further cracking, or can be used in semi Diesel engines, light fuel oil or illuminating gas making.

The gas oil analyzed as follows using a 100 c.c. Engler distillation flask:

Gas Oil

Baume gravity	36.2
Initial boiling point	456° F.
End boiling point	632° F.
Per Cent Distilled Over by Volume	Temp. Deg. F.
10	470
20	480
30	488
40	494
50	501
60	507
70	517
80	531
90	558
98	632

Residuum

The residuum oil resulting from the cracking of the Kentucky fuel oil has many properties quite widely different from the oil from which it was produced.

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The viscosity and cold tests are lower. Whereas the British thermal units per gallon are higher. The fuel value is markedly superior to the charging stock oil. Another important fact is the remarkable stability of the heavy high boiling point hydrocarbons under distillation at atmospheric pressure. The charging stock oil decomposed at temperatures around 710° F. while the residuum oil was stable at temperatures above 775° F.

The analysis of the residuum oil is as follows:

Baume gravity	16.5
Cold test below	0° F.

Viscosity Saybolt Furol

77° F.	150 sec.
122° F.	27.5 sec.

Cleveland Open Cup Tester

Flash	315° F.
Fire	370° F.
Coke	12.3 Per Cent
Calorific Value	19,250 B.T.U. per pound

Engler Distillation
(100 c. c. charge)

Initial boiling point	310° F.
13 per cent boiling over at	572° F.
0 per cent water.	

Per Cent Distilled Over	Temp. Deg. F.
10	545
20	605
30	660
40	705
50	730
60	745
70	775
80	780

a) The residuum may be topped so as to produce distillates suitable for cracking stock, illuminating gas making, semi Diesel engine or light fuel oil purposes.

b) Or the residuum may be distilled so as to leave an asphaltic residue. The distillate makes excellent cracking stock and can be blended with fresh charging stock.

c) The coke produced from the residuum makes an excellent fuel or it can be utilized for metallurgical purposes, electrodes as the sulphur and ash content is low. It may also be suitable for briquetting.

d) The residuum makes a superior fuel oil due to its low viscosity, cold test and high heat content per gallon.

Uncondensable Gas

3. The uncondensable gas produced has a high thermal value. The fuel oil per gallon produced 4.4 feet of gas under cracking conditions. During the cracking of 924 bbls. Kentucky fuel oil 170,828 feet of gas were made or at the rate of 18,500 feet per 100 bbls. cracked.

Calculating the market value of the uncondensable gas to be approximately 50 cents a thousand feet, the income would be at the rate of 10 cents per barrel of the fuel oil cracked. The gas has a B. T. U. content of 1,300 per foot and has economic value in a double sense in that it is of particular importance by blending to increase the heat units of water gas to government specifications.

Commercial higher alcohols are being produced from gases produced by cracking. Also acetates are being produced. Glychols and chlorhydrins may be manufactured from the unsaturated hydrocarbons present in the gas. Other uses for the gas are for lampblack making, welding or it may be burned in the cracking plant furnace for fuel.

4. The coke resulting from the pressure distillation of the fuel oil is low in ash and sulphur content. It is a dry coke having a high heat content, approximately 17 per cent higher than Solvay coke

The Kentucky fuel oil is a high coke former, and, for every 100 bbls. cracked 1.082 tons of coke were produced. This coke should have approximately a market value of $10 to $14 a ton. This calculates an income at the rate of 10 cents and more per barrel of fuel oil cracked. The coke is an important economic item in the cracking of fuel oil. Hence, instead of avoiding coke production, it is desirable to crack the fuel oil into over 43 per cent gasoline, and market the valuable by-product—coke.

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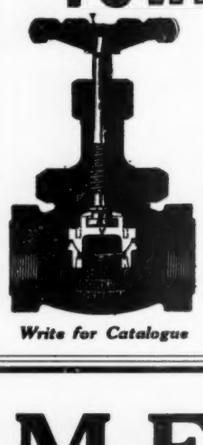

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lurgical, electrode, briquet, or directly for fuel purposes.

Summary of Run

(Kentucky fuel oil, made in plant having rated capacity of 250 bbls. per day)

Hours fire on to stream, 8¼.
Hours on stream, 72 (3 days).
Charging stock, Kentucky fuel oil, bbls., 924; gravity, 25.5.

Results from Cracking

Pressure distillate, bbls., 552; Be. Gr., 54.8; per cent of raw oil, 59.7; residuum, bbls., 319; Be. Gr., 16.5; per cent of raw oil, 34.5; coke, 10 tons; uncondensable gas, 170,828 cu. ft.; fuel consumption, per cent of raw oil, 6.22.

Yield from Pressure Distillate

Gasoline, bbls., 406; Be. Gr., 56.7; IBP-EP, 112-437; per cent of Pres. Dist., 73.5; per cent of raw oil, 43.9.

Gas oil, bbls., 111; Be. Gr., 36.2; IBP-EP, 456-632; per cent of Pres. Dist., 20.1; per cent of raw oil, 12.0.

Loss, bbls., 35; per cent of Pres. Dist., 6.4; per cent of raw oil, 3.8.

Total, bbls., 552; per cent of Pres. Dist., 100.0; per cent of raw oil, 59.7.

Percentages of Yield Based on Raw Oil Charged

	Pct. of raw oil
Gasoline	43.9
Gas oil	12.0
Fuel oil	34.5
Carbon Unc. gas	5.8
Loss (distilling pressure distillate)	3.8
Total	100.0

Conclusions

1. The Dubbs process has continuously cracked 924 bbls. of Kentucky fuel oil into 43.9 per cent gasoline, with one passage of the oil through the apparatus.

2. The cracking of the Kentucky fuel oil produced 10 tons of coke, which is at the rate of 1.08 tons per 100 bbls. oil cracked. The coke as a by-product has a market value at the rate of 10 cents per barrel of oil cracked.

3. The condensable gas produced from cracking the Kentucky fuel oil was at the rate of 18,500 feet per 100 bbls. processed. The gas has a market value, as a by-product, at the rate of 10 cents per barrel of oil cracked.

DOUBT GASOLINE TAX LEGAL IN MISSOURI

KANSAS CITY, Mo., Nov. 26.—A 50 per cent increase in the State motor vehicle registration fee is the suggestion of the Missouri State Highway Commission to obtain additional funds to speed up the State road program. The board accepts full responsibility for rejecting the 2-cent gasoline tax as a solution of the problem. The gasoline tax suggestion was discarded because of the doubtful constitutionality of such a measure. The report says:

"Lawyers do not agree as to whether a tax on gasoline can be so framed as to be held valid in Missouri, in view of a Missouri decision some years ago, but most agree that such a measure would be tied up by litigation. This delay would thwart the purpose of the suggestion that the commission felt in duty bound to make as to advancing the program. It might be a judicious thing for the general assembly to levy a tentative gasoline tax of say 1 cent a gallon, effective July 1, and let its validity be tested in the Supreme Court, so that the law might be clearly known before the regular session in January, 1925, for guidance both in carrying on the current program and providing the method of completing the entire State highway system."

ANDREW SHIDEMANTLE DIES

Andrew Shidemantle, 78 years old, died recently at his home in Parker's Landing, Pa., from valvular heart trouble after two years' illness.

He was one of the few successful pioneer oil operators in the upper and lower Pennsylvania oil fields and was an authority on the more intricate problems confronting the oil producer. He drilled the first big well on the John Webber farm, south of Butler, which resulted in the extensive developments in that prolific district.

Mr. Shidemantle is survived by the following children: Mrs. W. F. Parker, Dallas, Texas; Mrs. C. B. Smith and William A., Parker's Landing, and Mrs. W. D. Imbrie, Harrisville, Pa.

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Oppose Gasoline Tax In Kansas as Unfair To Makers and Users

WICHITA, Kans., Nov. 26.—The proposal to put a tax of 1 cent or more a gallon on gasoline sold in Kansas will meet with strenuous opposition from both the refiners and the oil industry in general. Any legislation along this line is looked upon as unfair to the consumer as well as the refiner.

"Such a tax would have the effect of reducing consumption," said L. C. McClure, assistant to the president of the Sterling Oil & Refining Co. "At the present price of gasoline it might not keep people from buying all the gasoline they want, but such a tax is bound to be obnoxious when gasoline gets up around 20 to 25 cents a gallon again. If there were some real assurance that the tax would be kept strictly in a good roads fund that might make some difference. But I have no faith in the promises of politicians. They spend money and waste money. With the refiners fighting to keep their heads above water, this is a mighty poor time for politicians to be trying to shoulder more burdens on them. Wichita has several good-sized refineries and the town should help to build them up rather than make it impossible for them to exist."

H. G. James of the Derby Oil Co., formerly secretary of the Western Petroleum Refiners' Association, and one of the pioneers of the good roads movement, voiced his own opposition and the opposition of the Derby Company to the gasoline tax plan.

"The oil business already is bearing enough burdens," he said. "A vote of the public on a plan of taxation to net several million dollars a year would flatly reject any such plan; and the motor owners and drivers comprise a large portion of the public."

A law removing the automobile from personal property taxation and imposing a 'slightly' increased State license fee along with a gasoline tax is favored by the State Highway Department. Captain L. R. Tillotson, State highway engineer, declared, "The present moneys from automobile taxes should be used by the counties to reimburse benefit districts and to take care of county road projects. The law this department intends to sponsor will guarantee to all counties that in the future they may expect the State to take an active hand where local conditions especially do not warrant heavy expenditures of road money by the benefit system of financing."

Classified Advertisements Pages 110-111

$1,000,000 OIL DEAL NEGOTIATED

Chairman C. M. Haskell denies that the Middle States Oil Corp. is selling any of its holdings. He said the rumor arose from conveying of a lease comprising 63 acres in Wichita County, Texas, formerly held by a subsidiary. He said that as a result of this transfer the corporation acquired a larger interest in southern Arkansas. Mr. Haskell said this property cost $625,000 three years ago and was rated in the transaction at $1,000,000.

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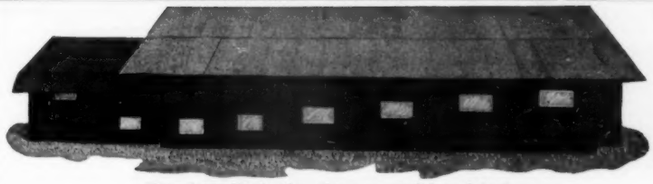
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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for September Runs

	Month	Daily Av.
*Prairie Pipe Line Co....	2,430,000	81,000
Gulf Pipe Line Co.....	1,509,583	50,319
The Texas Co.	458,524	15,284
Magnolia Pet. Co.	786,580	26,219
Empire Pipe Line Co.....	787,241	26 241
Cosden Pipe Line Co.....	599,709	19,990
Sinclair Pipe Line Co....	763,611	25,454
*Other lines	6,660,000	222,000
Total September 13,995.248		466,507
Total August 15,485,665		499,538
Difference 1,490,417		33,031

Shipments

†Prairie Pipe Line Co....	2,874,690	95 823
Gulf Pipe Line Co.....	1,196,569	39,886
†The Texas Co.	292,518	9,751
Magnolia Pet. Co.	688,632	22,954
Empire Pipe Line Co.....	837,947	27,932
Cosden Pipe Line Co.....	580,383	19,346
†Sinclair Pipe Line Co....	860,380	28,679
*Other lines	4,850,000	195,000
Total September 13,181.119		439,371
Total August 15,444,598		498,082
Difference 2,263,479		58,711

Stocks

*Prairie Oil & Gas Co.....	23,000,000
*Prairie Pipe Line Co.....	1,350,000
Gulf Pipe Line Co. and Gypsy Oil Co.	8,685,755
The Texas Co.	7,834,366
Magnolia Pet. Co.	7,588,752
Empire Pipe Line Co.	2,281,848
Cosden Pipe Line Co.	3 485,613
Sinclair Crude Oil Pur. Co.....	30,725,000
Carter Oil Co.	16,106,356
*Other lines	4,500,000
Total September 105,557,684	
Total August 104,257,688	
Difference 1,299,996	

*Estimated. †Includes shipments of Texas crude oil.

Note—Stocks do not include approximately 7,000,000 bbls. of crude oil held on private tank farms and leases.

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1920	1921	1922	1923
January	56,004	64,460	67,702	75.790
February	68,699	70,054	75,096	71,093
March	67,745	68,555	78,531	76,592
April	64,589	65,036	75,462	75,614
May	63,937	65,466	77,592	77,365
June	68 750	62,438	76,193	77,592
July	66,489	59,486	76,435	71,879
August	63,861	64,888	79,387	76,910
September ...	68,102	60,119	78,512	72,358
October	65,066	57,688	77,209	76,256
November ...	62,758	58,470	75,313	.....
December ...	60 975	61,000	73,351	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1920	1921	1922	1923
January	98,835	115,550	119,792	171,067
February	107,146	96,736	111,362	164,219
March	110,777	84,168	127,753	185,487
April	114,090	101,015	127,068	179,751
May	110,219	100,253	127 840	177,102
June	102,598	105,037	137,638	173,598
July	112,340	97,096	137,872	168,330
August	122,296	101,652	153,275	142,766
September	127,131	117,440	158,761	137,266
October	122,891	105 728	165,345	134,597
November	117,730	121,803	165,677	.....
December	117,201	104,023	172,861	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1921	1922	1923
January	7,916,353	16,297,858	14,040,567
February ...	8,721,878	17,009 293	14,028,437
March	9,818,766	16,877,937	13,873,146
April	10,369,941	16,777,842	13,737,575
May	11,224,694	16,948,962	13 815,622
June	12,328,126	16,810,169	14,541,253
July	13,798,698	16,669,286	14,646,584
August	15,155,633	16,235 229	14,770,539
September ..	15,525,750	16,228,545	14,803,444
October	15,761,079	15.757,746	14,504,111
November	14,971,071	15.171,972	.....
December	15 854.741	14,323,765	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1922—	Receipts	Shipments	Stocks
October	3,368.58	4,783.61	29,313.13
November	3,052.75	2,230.18	30,135.70
December	3,076.36	1,292.84	31,919.22
1923—			
January	2,798.55	2,461.36	32,256.41
February	2,692.93	932.33	34,017.01
March	2,978.88	12,417.00	24,578.89
April	3,529.12	3,054.09	25 053.92
May	3,538.73	4,856.42	23,736.23
June	2,927.71	4,743.78	21,920.16
July	2,996.64	1,471.57	23,445.23
August	3,199.07	3,769.34	22,874.96
September ...	2,829.79	5,822.38	19,882.37
October	2,694.23	5,251.81	17,324.79

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Nov. 1.....	2,466,238.64
Runs from wells	544,861.93
Other receipts	119,965.33
Regular deliveries	228,961.55
Other deliveries	474,479.61

The amount of Illinois oil run by the Tide Water Pipe Line Co. on October was 32,005.16 barrels, and deliveries were 118,-851.27 barrels. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

1922—	Runs	Deliveries
October	618,459.82	454,005.38
November	566,508.03	434,681.97
December	552,069.33	391,868.37
1923—		
January	599,239.86	470,958.84
February	496 421.79	382,566.83
March	625,006.81	472,920.76
April	521,910.87	423,548.43
May	624,107.98	523,516.00
June	582,511.82	509,137.77
July	594,653.42	489,269.17
August	594,747.94	367,152.82
September	542,561.59	306,925.40
October	576 867.09	347,812.82

The Tide Water Pipe Co., Ltd., also delivered in October 192,614.57 barrels of Oklahoma oil. The total deliveries of all grades by the Tide Water were 477,869.02 barrels.

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	188,712.66	211,486.93
S. W. Pa. P. L....	82,300.00	93,352.62
Eureka P. L.	368,672.93	430,327.54
Buckeye P. L. (Macksburg) ..	250,485.71	280,073.58
Buckeye P. L. (Cleveland) ...	16,280.77	19,218.85
Buckeye P. L. (Lima, etc.) ..	139 388.04	144,889.47
Indiana P. L.	14,150.22	14,811.54
Cumberland P. L.	386,752.33	399,736.19
N. Y. Transit	15,261.47	17,402.53
Tide Water P. L..	149,139.68	163,016.59
Pure Oil P. L....	177,281.66	190,792.36
Emery P. L.	31,486.08	35,209.98
Paragon Ref.	.....	.....
Inidan Ref.	309,242.57	315,405.99
Paragon Dev.	32,320.51	31,501.81
Pittsburgh P. L..	8,272.29	10,612.83
Swiss P. L.	995.34	1,015.89
Riggs Ref.	.....	5,083.17
Total	2,170,742.30	2,363,937.27
Daily av.....	72,358.08	76,256.04

Note—Indian Refining Co. also reported other receipts of 92,674.20 bbls. Paragon Refining Co. had other receipts of 17,-513.75 bbls. Paragon Development Co. had other receipts of 5,932.65 bbls. Pittsburgh Pipe Line had other receipts of 2,587.79 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	412,333.27	497,929.96
S. W. Pa. P. L. ..	261,116.40	283 546.24
Eureka P. L.	130,178.48	126,716.26
Buckeye P. L. (Macksburg) ..	86,985.91	82,031.31
Buckeye P. L. (Cleveland) ...	1,056.36	1,190.91
Buckeye P. L. (Lima, etc.) ...	693,616.91	641,793.54
Indiana P. L. ...	924,686.09	871,568.54
Cumberland P. L.	160,116.97	210,110.54
Southern P. L. ...	.....	.....
Crescent P. L....	73,331.96	95,990.17
N. Y. Transit	359,939.97	487,393.1
Northern P. L....	69,794.27	32 004.1
Tide Water P. L.	180,612.43	166,402.1
Pure Oil P. L. ...	173,186.23	152,289.3
Emery P. L.	31,492.26	34,574.10
Paragon Ref.	114,947.24	145,280.6
Indian Ref.	294,144.15	291,983.1
Paragon Dev.	37,152.37	37,398.1
Pittsburgh P. L..	11,341.66	13,262.1
Swiss P. L.	1,939.86	94.7
Riggs Ref.	.....	.....
Total	4,017,972.79	4,172 493.6
Daily average.	137,265.76	134,596.7

Gross Stocks

The gross stocks held by various pi lines in the oil producing section of N York, Pennsylvania, West Virginia, Oh Indiana and Kentucky at the close of Se tember and October were as follows:

	Sept., '23	Oct., '23
Nat. Transit	1,197,343.90	1,197,386.7
S. W. Pa. P. L....	924,128.98	879,13..3
Eureka P. L.....	1,934,234.44	2,004,502.3
Buckeye P. L. (Macksburg) ..	492 970.70	500,740.5
Buckeye P. L. (Cleveland)	12,414.25	30,341.6
Buckeye P. L. (Lima, etc.)	4,214,807.68	4,305,655.9
Indiana P. L.....	681,376.15	664,435.0
Cumberland P. L.	732,274.03	667,160.7
Southern P. L. ...	959,768.25	1,027,470.7
Crescent P. L....	78,603.29	69,131.
N. Y. Transit	1,739,879.71	1,457 294.
Northern P. L....	930,808.95	864,694.1
Tide Water P. L.	.....	.....
Pure Oil P. L....	293,002.25	323,826.5
Emery P. L.....	5,811.39	6,273.5
Paragon Ref.	180,341.45	166,464.0
Indian Ref.	400,841.76	516,278.6
Paragon Dev.	11,121.59	10,052.0
Pittsburgh P. L..	9,171.35	9,272.6
Swiss P. L. Co. ..	4,482.75	2,861.6
Riggs Ref.	.....	1,146.0
Total	14,803,443.87	14,504,116.5
Increase	32,905.27	
Decrease		299,333.5

Grades of Oil

The following table shows the amou of the different grades of oil held by t eastern pipe lines at the close of Septemb and October, showing the gross stocks the above fields:

	Sept., '23	Oct., '23
Pennsylvania	3,601,488.55	3,791,868.5
Lima	888,203.63	937,787.1
Kentucky	1,998,875.17	1,964,677.5
Mid-Continent ...	7,951,689.79	7,344,248.0
Illinois	363,186.73	665,533.5
Total	14,803,443.87	14,504,116.6

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	All Po
July	110,750	18,750	517,000	185,250	121,750	952,500	.....	139,750	.....	.....	139,750	1,092.
August	116,067	51,709	688,485	222,873	151,970	1,231,104	.....	24,612	219,030	.....	243,642	1,474.
September	205,600	47,400	516,200	124,200	126,600	1,000,000	.....	140,600	.....	.....	140,600	1,140.
October	195,000	56,000	626,000	220,000	107,000	1,178,000	.....	208,000	.....	.....	208,000	1,386.

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	All Po
May	114,665	128,750	256,500	109 250	153,750	662,915	336,250	227,500	298,500	63,500	924,750	1,587.
June	62,800	84,200	358,200	153,400	161,800	757,600	301,000	228,400	212,400	45,800	787 600	2,332.
July	71,750	116,250	461,500	112,000	218,750	970,250	367,750	280,000	208,250	23,000	879,000	1,849.
August	116,065	89,113	374,613	102,970	197,127	879,888	338,485	266,224	234,388	45,633	1,295 730	2,175.
September	53,600	113 000	353,200	132,000	149,600	801,400	355,200	279,400	176,000	44,800	714,200	1,656.
October	91,250	48,000	298,500	134,000	204,000	800,750	247,000	352,500	95,000	125,000	707,000	1,507.

PRODUCTION BY MONTHS AND DAILY AVERAGE PRODUCTION IN THE U. S. FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming Montana	Other Fields	Total
1922—										
October:	Month	13,419,432	13,222,151	9,106,994	2,638,875	780,797	2,782,994	2,856,805	3,550,182	48,358.
	Daily average	432,885	426,521	293,774	85,125	25,187	89,774	92,155	114,522	1,559.
November:	Month	14,035,537	12,613,560	8,676,000	2,646,091	1,023,450	2,529,150	2,208,800	3,205,290	47,637
	Daily average	467,818	420,452	289,200	85,261	34,115	84,305	96,960	106,483	1,587
December:	Month	15,426 810	13,185,416	8,707 931	2,649,900	1,596,500	2,463,291	3,108,866	3,149,445	50,284
	Daily average	497,639	425,336	280,901	82,330	51,500	79,461	100,286	101,595	1,623
1923—										
January:	Month	16,457,445	13,328,574	8,881,009	2,826,611	2,817,002	2,428,018	3,124,707	3,423,516	52,786
	Daily average	530,885	426,817	286,484	91,181	74,742	78,323	100,797	110,436	1,703
February:	Month	16,426,759	12,045,020	7,663,992	2,748,660	2,258,984	1,084,008	2,922,192	2,907,340	48,056.
	Daily average	586,670	444,465	273.714	91,622	80,678	67,286	104,364	104,405	1,716.
March:	Month	19,608,192	13,955,828	8,462,783	2,847,040	2,970,575	2,312,600	3,274,778	3,464,529	56,896.
	Daily average	632,525	450,188	272,993	91,840	95,825	74,600	105,638	111,759	1,836
April:	Month	20,695,959	14,399,610	8,403,240	2,768,052	2,766,000	2,160,300	3,584,048	3,281,340	58,058.
	Daily average	689,865	479,987	280,108	89,292	92,200	72,010	115,947	109,378	1,936.
May:	Month	21,535 365	15,658,782	8,932,000	2,805,750	3,389,000	2,175,000	3,566,600	3,546,400	61,606.
	Daily average	694,689	505,122	288,129	93,525	109,323	70,161	115,051	114,400	1 987.
June:	Month	22,667,106	15,572,730	8,817,000	2,797,830	3,078,990	1,981,800	3,385,600	3,401,400	61,702.
	Daily average	755,570	519,091	293 900	93,261	102,633	66,066	122,853	113,380	2,056.
July:	Month	25,262,082	15,260,154	10,662,000	2,448,566	2,859,000	2,012,000	4,143,400	2,788,600	65,436.
	Daily average	814,906	492,264	343,935	78,986	92,226	64,903	133,657	89,955	2 110.
August:	Month	26 440,005	14,049,076	11,454,000	2,316,320	3,113,000	2,078,000	4,180,000	3,473,300	67,103.
	Daily average	852,903	453,196	369,484	74,730	100,419	67,032	134,861	112,043	2,164.
September:	Month	25,762,500	13,812,220	13,287,000	2,234,130	3,350,000	1,855,000	4,449,500	3,262,800	66,013.
	Daily average	858,750	427,074	409,567	74,471	111,666	61,834	148,317	108,760	2 200.
	Twelve months	237,737,192	166,113,151	112,053,944	31,727,825	29,503,298	25,862,186	31,505,296	39,454.142	683,947.
	Total daily average	651,336	455,106	306.997	86,898	80,831	70,855	86,316	108,094	1,866.